MEDICAL REPORTS

OF THE

EFFECTS of ARSENIC,

IN THE CURE OF

AGUES, REMITTING FEVERS,

AND

PERIODIC HEADACHS;

By THOMAS FOWLER, M. D.

Physician to the General Infirmary of the County of Stafford.

TOGETHER WITH A LETTER FROM DR. ARNOLD, OF LEICESTER, AND ANOTHER FROM DR. WITHERING, DESCRIBING THEIR EXPERIENCE OF THE EFFECTS OF ARSENIC IN THE CURE OF INTERMITTENTS.

Plurimum referre cenſemus, ſi Medici aliqui,
——————————opus aliquod conficiant; de Medicinis probatis et experimentalibus, ad Morbos particulares.
VERULAMIUS de Augment. Scient. Lib. IV. Cap. II.

——Poiſons in ſmall doſes are the beſt medicines, and the beſt medicines in too large doſes are poiſonous.
WITHERING'S Botanical Arrangement.

LONDON.

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MDCCLXXXVI.

BRITISH MUSEUM

TO

ANDREW DUNCAN,

M. D. F. R. & A. S. Ed.

PHYSICIAN TO HIS ROYAL HIGHNESS THE PRINCE OF WALES FOR SCOTLAND,
FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH, AND MEMBER OF THE ROYAL SOCIETIES OF MEDICINE OF PARIS, COPENHAGEN, EDINBURGH, &c.

Sir,

AS neither Time nor Diſtance can ever efface from my Memory the Kindneſs and Friendſhip with which you honoured me during my Reſidence at Edinburgh; I beg leave to inſcribe to you theſe medical Reports, as a Teſtimony of my great Reſpect for your Abilities and Virtues, and of the Sincerity with which I remain,

Your affectionate Friend,

and much obliged humble Servant,

THOMAS FOWLER.

Stafford, May 23d
1786.

PREFACE.

THE Medical Reports, which the Author lately publiſhed, relative to the Effects of Tobacco, in the Cure of Dropſies and Dyſuries, having been favourably received by the Public; and the general diuretic Property of that Medicine, confirmed by further Experience; he is encouraged to purſue the ſame Plan, with Regard to another powerful Article of the Materia Medica.

Arſenic is a Mineral which has long been reputed one of the moſt violent Poiſons hitherto known; and accordingly has been reprobated in the ſtrongeſt Terms by almoſt every medical Writer, that has ever deigned to notice it; and yet there is good Reaſon to

believe it bids fair to hold a Place, among the beſt and moſt valuable Medicines; and to rank with the peruvian Bark in the Cure of Agues, remitting Fevers, and periodic Headachs.

Efficacious Medicines are certainly of the utmoſt Importance in Practice, the Inveſtigation of which, has been frequently recommended by many celebrated Philoſophers and Phyſicians, who have done Honour to Science amongſt the Ancients; and by ſome Authors of the higheſt Reputation amongſt the Moderns, particularly Bacon, Boyle, Baglivi, and Boerhaave. The preſent Materia Medica, however, notwithſtanding the many Volumes that have been written upon the Subject, makes but a very humble Appearance, with Regard to Medicines of real Efficacy and Importance; and therefore, if by an experimental Enquiry, another efficacious Medicine is likely to be added to the Number of the few valuable Ones already eſtabliſhed, it is to be hoped, that ſuch an Attempt will not be deemed unworthy of Attention.

Perhaps

Perhaps by ſome it may be alleged, that the Ague is a very common and inſignificant Diſeaſe, becauſe frequently cured both by Art and Nature, and that conſequently there is no Occaſion for the Inveſtigation of a new Medicine on that Account. But certainly it is a Diſeaſe of much Importance; for whenever it continues long, Coldneſs, Paleneſs, and Debility, are its conſtant Concomitants, and evince it to be the fertile Parent of Cachexy; and when it occurs in old Age, or in Conſtitutions broken down by Intemperance, or ſome previous Diſeaſe, how often do we find it accelerate the Acceſſion of Jaundice, Conſumption, Dropſy, or ſome other Miſchief of fatal Conſequence.

Fatal however as the Diſeaſe has been in its Conſequences, it is well known to Practitioners that there are many Caſes wherein not only the minor Remedies have proved ineffectual, but even the Bark itſelf has failed, or otherwiſe its Adminiſtration not been admiſſible; and therefore a powerful vicarious Remedy for ſo frequent a Diſtemper, becomes an important Object.

It may alſo be objected, that to introduce a Poiſon to the Public as a general Medicine, is to put a two-edged Sword into the Hands of the Ignorant. But the ſame Argument will equally apply againſt ſeveral of the moſt efficacious Medicines in daily Uſe, in particular, Opium, and ſome of the more active Preparations of Mercury and Antimony.

Or if for a Moment, the Force of this Argument be admitted, yet when it is conſidered that a Patent Medicine has, for ſome Years paſt, been largely circulated through the Kingdom, as a Specific for Agues, under the Title of the Taſteleſs Ague and Fever Drops; that from its Effects in Practice there is the ſtrongeſt Reaſon to believe it to be an arſenical Preparation; and that on this very Ground, it is at preſent imitated in different Parts of the Kingdom, the Objection becomes nugatory.

Therefore, if any new and important Medicine, either from its active Nature, or an imprudent Adminiſtration thereof, is found to be ſometimes connected with diſtreſſing and deleterious Effects, it becomes highly requiſite

that

that the Public ſhould ſpeedily be made acquainted with ſuch Effects, as far as they are known; together with ſuch Precepts, Cautions, and Reſtrictions, as may tend to unite the greateſt Degree of Safety with its Efficacy. Nothing however, of this Sort, has as yet been done; which Conſideration, it is preſumed, will be an Apology for an early Publication on ſo intereſting a Subject, and for ſuch Imperfections as may have taken Place from that Circumſtance.

When the Patent Ague Drops began to acquire ſome Reputation in the Country, they were occaſionally adopted in the Hoſpital Practice of this Place, in 1781, 1782, and 1783, and were found efficacious.

In the Beginning of October, 1783, Mr. Hughes, the Apothecary to the Infirmary, (whoſe Induſtry, Attention and Abilities in his profeſſional Line, juſtly merit Applauſe) informed the Author, that he had tried to imitate the Ague Drops, and, from a number of Experiments, had ſo far ſucceeded (his Medicine having produced ſimilar Effects) that he was convinced they were a Preparation of Arſenic.

In

In Conſequence of this general Intimation, the Author of theſe Sheets conſulted Lewis's Materia Medica upon Arſenic, and agreeable to his pharmaceutic Hiſtory of that Article, he diſſolved a ſmall Portion of the white Sort in a Solution of the fixed vegetable Alkali. On trying and comparing the Effects of this Solution, with thoſe of the Patent Ague Drops, he found the Medicine to be ſimilar, but that the former was too ſtrong: he therefore diluted the Solution, by doubling the Proportion of Water, and then comparing their Effects, found the Medicines nearly of an equal Strength.

Having thus become acquainted with what he eſteemed a powerful Medicine, he was ſtrongly impreſſed with an Idea of its Importance; and therefore has kept a regular and connected Hiſtory of the Caſes in which he has preſcribed it. Hence the following Reports contain an Account of the curative Effects of the Medicine, deſcribed in a juſt Proportion of Examples of Succeſs and Failure, in the Courſe of its Adminiſtration. They alſo contain a

parti-

particular Account of its operative Effects, which being ſometimes troubleſome, both in Degree and Number, will be found to merit a ſerious Attention. They are likewiſe divided into Sections, in order that the Caſes of ſimilar Nature, Treatment or Event; and alſo the Obſervations more immediately appertaining to each particular Part of the Subject, might appear in a more clear and practical Point of View.

The Caſes drawn out at large are but few, and thoſe which are abſtracted not ſo numerous as Some might think neceſſary, conſidering the Number which the Writer has collected. But certainly it is ſufficient for an Author, to deliver, in as conciſe a Manner as poſſible, ſuch a View of the Reſult of his Experiments, with the Mode of conducting them, as may be clearly underſtood and readily applied to Practice. Beyond this Point, a Multiplicity of Caſes and Arguments is of no Conſequence; becauſe, every Publication which appeals to the Reality of Facts for its Importance, will ſoon have its Propoſitions either confirmed or rejected, by the daily Experience of the Public.

The

PREFACE.

The Author profeſſes himſelf a ſtrong Advocate for an effective and powerful Materia Medica; on which Account, the Subjects of his late and preſent Reports have engaged a Share of his moſt ſerious Attention. The Properties however of mild and ſimple Medicines, have occaſionally been the Objects of his Inveſtigation; and his Enquiries in that Line have convinced him, that among the many trifling and inſignificant Articles, which are ſtill retained in the Materia Medica, there are ſome valuable Medicines, that are not in the Reputation they are juſtly entitled to; a few Examples of which, it will give him Pleaſure to communicate in ſome future Publication. In the mean Time, as the Idea of a Poiſon ſeems to be ſo ſtrongly connected with that of Arſenic, it will be found very difficult to ſeparate them in the Mind, whenever that Term is named; and therefore to avoid as much as poſſible, ſuch a diſagreeable Aſſociation of Ideas, in the Practice of the healing Art, the Medicine now about to be introduced to the Notice of the Public, will be diſtinguiſhed by the Name of the *Mineral Solution*.

ADVER-

Advertiſement.

ALL the Caſes beginning with the Words In-Patient, and Out-Patient, belonged to the Infirmary; the Reſt were chiefly ſuch as the Author gave Advice to at his own Houſe.

When the Mineral Solution is ordered thrice a Day, ſix o'Clock in the Morning, two in the Afternoon, and ten o'Clock in the Evening; and when twice a Day, ten in the Morning, and ten in the Evening, are to be conſidered as the medicinal Hours, or Periods for its Adminiſtration.

Unleſs the Solution be ordered in ſome particular Vehicle, it is always to be underſtood, that Adults are to take it in a Tea-cupful of Water, and that the Doſes for Children are to be given in the ſame Vehicle, proportionably diminiſhed.

Every Medicine preſcribed by a general Title, without a Reference, is to be found in the London Diſpenſatory.

Stafford, March 10th, 1786.

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MEDICAL REPORTS, &c.

SECT. I.

Cases of Agues, cured by the Mineral Solution, with Observations.

CASE I.

CATHARINE HAMES, of Tamworth, aged 17, admitted an In-Patient, January 23d, 1784, has had a quotidian Ague for three Days past: Appetite impaired.

Ordered to take eight Drops of the Mineral Solution †, three Times a Day, for three Days.

January 26th.

The Solution caused no Disturbance in the System, and she has missed her Fit this Morning: Appetite very bad.

Ordered sixteen Drops of the Solution this Evening, and then to resume the former Doses, three Times a Day, for two Days.

† Solutio Mineralis. No. 1.

January 28th.

Sixteen Drops did not prove Emetic, but cauſed a looſe Stool, with ſome Griping; the ſubſequent Doſes, of eight Drops each, gave no Diſturbance, and ſhe continues free from her Ague. Appetite ſtill very indifferent.

Ordered half an Ounce of the Spirituous Tincture of Rhubarb, at Bed-time.

January 31ſt.

It operated gently, and with Relief to her Stomach. No Return of Fits.

February 7th.

No Relapſe.

CASE II.

DOROTHY PERKINS, of Hopton, aged 14, admitted an Out-Patient, February 4th, 1784, has been affected with a quotidian Ague for a Week paſt. Functions natural.

Ordered ten Drops of the Solution, twice a Day, for three Days.

February 11th.

She did not begin to take the Solution, till the

the next Morning, and then by Miſtake took five Doſes in nine Hours. It operated from the Time ſhe had taken the ſecond Doſe, as a violent Emetic, attended with Nauſea, and painful Griping and Purging, for the Space of ten Hours: ſoon after which, all the Effects entirely ceaſed; and ſhe has not had the leaſt Signs of Ague ſince.

CASE III.

WILLIAM BLEWER, of Walton, aged 14, admitted an Out-Patient, March 3d, 1784, with a quotidian Ague, of near a Month's Continuance: Stools regular.

Ordered twenty Drops of the Solution, three Times a Day, for three Days.

March 6th.

The Solution excited Nauſea, and purged him three or four Times a Day, with griping Pains; and every Doſe, except the Evening Ones, proved emetic. He has had no Paroxyſms.

After two Days Intermiſſion, ordered to repeat the Solution, twice *a Day, for three Days.*

March 13th.

It has neither griped nor purged, and only

proved emetic with Nauſea, at the ſecond Doſe. He has remained quite free from the Ague.

March 31ſt.

Continues quite well.

CASE IV.

SARAH BLEWER, of Acton, aged 4, admitted an Out-Patient, March 14, 1784; ſhe has had a tertian Ague for a Week, the laſt Fit Yeſterday Morning: Body open.

Ordered eight Drops of the Solution, twice a Day, for three Days.

March 17th.

The Solution excited Nauſea and vomiting, twice with each Morning Doſe: ſhe had a Fit two Mornings ago; but has quite miſſed it this Morning.

After two Days Intermiſſion, ordered to repeat the Solution, for two Days.

March 31ſt.

The Effects of the Solution much the ſame, and no Return of Ague.

OBSER-

OBSERVATIONS.

IN the Caſe of Catharine Hames, the Doſe of ſixteen Drops of the Solution, was given with a View to cleanſe her Stomach, as an Emetic; but we find it rather operated downwards. The other Doſes were ſmall, and attended with no Operation; yet the Cure was ſpeedy and ſucceſsful. The Tincture of Rhubarb relieved the Anorixia (or Loſs of Appetite) which is ſometimes an Effect of the Solution; but could not be conſidered as ſuch in this Inſtance; becauſe it exiſted previous to the Adminiſtration of that Medicine.

The next Patient Dorothy Perkins, was guilty of a very groſs Miſtake, by taking five Doſes of the Solution, in leſs Time than ſhe ought to have taken two. The Cure indeed was ſpeedy; but the Operation was conſiderable, as might reaſonably be expected. This Caſe ſerves to ſhew, that ſome Conſtitutions will bear a great deal more of the Solution, than is neceſſary for a medicinal Operation, without any bad Conſequences. At the ſame Time, it ought to be conſidered by no Means as an Encouragement, for any one to preſcribe it in ſuch a Manner.

The Caſe of William Blewer was treated with large Doſes; yet the operative Effects were very ſupportable, and the Cure ſpeedy and permanent.

The next Caſe was that of a Child of four Years

Years old, treated alſo with large Doſes. The Event was equally ſucceſsful, and the operative Effects not violent.

CASE V.

JAMES JONES, a Traveller, aged 22, admitted an In-Patient, March 21ſt, 1784. He has lived for ſome Time in the County of Kent, and has had an Ague of ſix Months Continuance, the firſt two Months a Tertian, and the laſt four a Quartan. He has uſed many Medicines, and had the Tertian ſuſpended once for three Weeks; but the Quartan has hitherto reſiſted every Remedy. He is thirſty, and bound in his Body; his Pulſe quick, Face pale, and Appetite much impaired.

Ordered an antimonial emetic Powder † in the Evening; five Grains of Calomel, going to Bed; and two Ounces of a cathartic Mixture ‡ in the Morning.

March 23d.

The Emetic operated well, brought up much Phlegm, and his Appetite is better. He had ſeveral Stools with the Cathartic; but is ſtill inclined to be coſtive: he had a regular Paroxyſm Yeſterday.

Ordered

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† Pulvis Emeticus Antimonialis. No. 2.

‡ Miſtura Cathartica. No. 3.

Ordered ten Drops of the Solution, three Times a Day, for five Days; and to take the Size of a Nutmeg of an aperient Electuary || when coſtive.

No Paroxyſms for ſeven Days paſt, and the laſt was much milder: no Operation from the Solution. He gathers Strength, although his Appetite is but moderate: his Body is kept gently open by the Electuary.

Ordered to repeat the Solution, for three Days; and then to take a Dram of the bitter Tincture, with thirty Drops of the compound Spirit of Lavendar, in Water, twice a Day.

April 9th.

The Solution produced a ſlight Nauſea, two or three Times; the Tincture and Drops agreed well with the Stomach; Appetite and Spirits good, Strength much recovered; no Complaints.

CASE VI.

ANN TOMKINSON, of Gnoſall, aged 18, admitted an Out-Patient, March 31ſt, 1784, has been afflicted with a quotidian Ague for ten Weeks paſt; has alſo loſt much Fleſh and Strength, and is cachectic. Appetite very bad, Body coſtive, and ſleeps ill.

Ordered

|| Electarium Aperiens. No. 4.

Ordered twenty ſix Drops of the Solution, twice a Day, for three Days.

April 7th.

It always excited Nauſea, and every Doſe, except one, proved Emetic; but neither griped nor purged. She has entirely miſſed her Fits theſe laſt four Days.

Ordered to repeat the Solution for two Days.

April 17th.

No Return of Ague, and no Complaint except Debility.

May 1ſt.

No Relapſe.

CASE VII.

April 11th. 1784.

ELIZABETH EVANS, of Acton, aged 14, affected with a tertian Ague for ſeven Days paſt; the laſt Fit was two Days ago, and very violent. Stools regular; but Appetite impaired.

Ordered ten or twelve Drops of the Solution, twice a Day, for five Days.

It

April 17th.

It proved laxative on the ſecond Day, and ſeems to have rendered the Appetite worſe: no Paroxyſms for four Days.

Ordered an antimonial emetic Powder in the Evening; and eight Drops of the acid Elixir of Vitriol, in Water twice a Day, for four Days.

April 22d.

The Loſs of Appetite much relieved by the Emetic, and no Return of Ague.

Ordered twelve Drops of the Solution, twice a Day, for three Days.

April 29th.

During its Adminiſtration, ſhe was ſick every Morning, and had a Relapſe of two Fits; but the latter was very ſlight, and has had None ſince.

Ordered the antimonial emetic Powder as before; and to repeat the Solution for three Days.

May 7th.

The Sickneſs was relieved by the Operation of the Vomit. She took the Solution, and has had no Ague ſince the laſt Report, except a ſlight Fit to Day.

Ordered to repeat the Solution, twice a Day, for ſix Days.

May 16th.

No Operation from the Solution, and has had no Fits ſince laſt Report, except one within theſe two Days.

Ordered ten Drops of the Solution, three Times a Day, for three Days.

June 6th.

It ſat eaſily on the Stomach, and the Ague was ſuſpended till within theſe three Days, during which ſhe has had two Fits.

Ordered twelve Drops of the Solution, three Times a Day, for three Days.

June 26th.

The Solution has agreed with her Stomach: ſhe had one ſlight Fit on the 7th, and None ſince; but has remained quite well.

CASE VIII.

April 12th, 1784.

ANN HODSON, of Acton, aged 6, has been affected with a quotidian Ague for a Month

Month paſt: ſhe is alſo very pale, thin, and weak; Stools regular.

Ordered four Drops of the Solution, twice a Day, for five Days.

April 18th.

The Solution has occaſioned two or three looſe Stools a Day, with ſome little griping; and ſhe has had four Paroxyſms, three of them decreaſing, and None theſe two laſt Days. Her Eye-lids have been much ſwelled theſe ſeveral Days (eſpecially in a Morning) and Appetite impaired.

Ordered five Grains of the antimonial emetic Powder, in the Evening.

April 20th.

The Powder ſeemed to operate with much Relief. The Swellings of the Eye-lids gone, Appetite better, Stools regular, Spirits good, and no Return of Ague.

Ordered three Drops of the Solution, twice a Day, for two Days; and then a Steel Pill twic e a Day.

‖ Pilulæ Chalybeatæ. No. 5.

May 2d.

Took the Solution, and has had no Return of Ague. Pills ſat eaſily on the Stomach; Appetite good.

Ordered to continue her Pills.

May 9th.

No Return of Ague, and general Health improved.

OBSERVATIONS.

THE Ague of James Jones, of ſix Months Continuance (moſt of that Time a Quartan) and originating in a fenny Country, will doubtleſs be conſidered as one of the moſt obſtinate Kind; yet it was ſpeedily and entirely removed, by the Uſe of the Solution, for eight Days; and as his Appetite was good, and his Strength ſurpriſingly recovered for the Time, there was good Reaſon to hope the Cure would prove radical; although the Doſes of the Solution were ſmall, and attended with little or no Operation.

Ann Tomkinſon's Ague of ten Weeks, was cured by taking the Solution in large Doſes, only five Days: the operative Effects were ſmart, but very ſupportable.

Elizabeth

Elizabeth Evans exhibited a caſe remarkably tedious, relapſing four Times in the Space of ſix Weeks; which I believe was chiefly occaſioned, by the Solution being given only twice a Day, and by its Uſe being too much interrupted from the Occurrence of Anorexia, and her dilatory Attendance for Advice. When ſhe was ordered to take twelve Drops, three Times a Day, for nine Days; the Cure was ſoon rendered complete and permanent. Indeed the curative Influence of the Solution, was very conſpicuous every Time it was repeated. The Anorexia and Sickneſs, as operative Effects, were pointedly relieved by the Emetics.

The Habit of Ann Hodſon was highly cachectic, the operative Effects of the Solution rather troubleſome, and the Doſes ſmall; yet the Cure was ſucceſsful. The Swellings went off in a Day or two, after ſuſpending the Uſe of the Solution; and the Anorexia was evidently relieved by the Vomit.

CASE IX.

April 30th. 1784.

WALTER LYCET, of Milford, Labourer, aged 38, has had two tertian Fits, and three quotidian, the laſt Fit early this Morning: Body gently open; Appetite rather impaired.

Ordered

Ordered ten Drops of the Solution, three Times a Day, for three Days.

May 6th.

It rather griped, and made him a little ſick ſeveral Times. He has had no more Fits. Bowels eaſy, and Appetite better theſe two laſt Days, ſince he finiſhed the Medicine.

Ordered to repeat the Solution for three Days.

May 16th.

The Effects of the Medicine the ſame, and no Return of Ague. Appetite quite good, and Strength recovered.

CASE X.

May 4th. 1784.

RICHARD BENTLEY, of Brancot, aged 17, a Farmer's Servant, was ſeized two Months ago with a quotidian Ague, which laſted for three Weeks. It was immediately ſucceeded by a Tertian, which has continued for theſe five Weeks, the laſt Fit this Morning. He has loſt ſome Fleſh and Strength; Functions natural.

Ordered

Ordered ten Drops of the Solution, three Times a Day, for five Days.

May 9th.

No ſenſible Effects from the Solution: he has only had one Fit, and ſeems to recover Strength.

After three Days Intermiſſion, ordered to repeat the Solution, for three Days.

May 17th.

He took the Solution as directed; yet had a threatening Senſation of a Fit, two Days ago, and this Morning the Paroxyſm was completely formed.

Ordered twelve Drops of the Solution, three Times a Day, for ſix Days.

May 23d.

He has not had the leaſt ſenſible Effect from the Solution, and no Paroxyſm ſince the laſt Report.

After four Days Intermiſſion, ordered to repeat the Solution, for three Days.

No

May 29th.

No operative Effects from the Solution, and no Signs of Ague. He appears quite well.

CASE XI.

May 17th. 1784.

JOHN FARMER, of Brancot, aged 13, has had three tertian Fits, and two quotidian: Stools regular; but Appetite impaired.

Ordered seven Drops of the Solution, three Times a Day, for five Days.

May 23d.

It caused a slight Nausea, and two or three Stools a Day without griping, and he has had but one Fit since last Report: Appetite improved.

After three Days Interval, ordered to continue the Solution, for four Days.

May 29th.

It made him rather sick, but caused no loose Stools: He has had no Fit for nine Days, seems quite well, and is therefore dismissed from his Attendance.

After

June 17th.

After being freed from the Ague twenty five Days, he happened to be much expoſed in the Rain, caught Cold, and has had a Relapſe of two Fits, within theſe laſt three Days.

Ordered to repeat the Solution, for three Days, as before.

June 20th.

The Solution produced no Operation, and he has had but one Paroxyſm ſince laſt Report.

Ordered to take ten Drops of the Solution, three Times a Day, for three Days in ſeven, for three ſucceſſive Weeks.

July 18th.

No Operation from the Solution: he continues free from his Ague, and appears quite well.

CASE XII.

May 18th. 1784.

HANNAH HARVEY, of Bednal, aged 18 Months, had the fifteenth Fit of a tertian Ague yeſterday. Her Appetite is bad, and

Body bound. She has loſt much Fleſh and Strength, appears languid and drowſy, and ſweats much after each Fit.

Ordered two Drops of the Solution, three times a Day, for four Days.

May 23d.

She has had two or three looſe Stools every Day from the Solution, apparently without griping, and has only had one Fit five Days ago. Appetite and Spirits better.

After three Days Intermiſſion, ordered to repeat the Solution, for three Days.

May 30th.

By Miſtake the Medicine was taken immediately after the laſt Report It cauſed two eaſy Stools a Day, and ſometimes a ſlight Sickneſs. She has had no return of the Ague, gains Strength, and appears free from Complaints.

OBSERVATIONS.

THE Ague of Walter Lycet was cured, by his taking the Solution for ſix Days, in ſmall Doſes: the curative Influence was immediate, and the operative Effects mild.

In

In Bentley's Caſe, I am inclined to believe, the Relapſe was owing to his having taken the Solution in too ſmall Doſes, and not continuing it long enough; for when theſe Circumſtances were obviated, on its being repeated, the curative Effect was not only immediate, but permanent.

The Relapſe in the Caſe of John Farmer, is clearly accounted for by his catching Cold: the curative Effect of the Solution was very pointed, both in the Suſpenſion of the Diſeaſe, and Cure of the Relapſe; for we find he had but one Fit, after commencing each Courſe of the Solution.

The next Patient, an Infant of eighteen Months, was radically cured of a Tertian of thirty Days, by taking the Solution ſeven Days, and the operative Effects were very mild.

CASE XIII.

ELIZABETH WILLIAMS, of Littleworth, near Stafford, aged 12, admitted an Out-Patient, May 25th, 1785, has had a tertian Ague for ſix Weeks paſt. She is very pale, weak, and much affected with Stupor: Appetite bad; Stools regular.

Ordered ten Drops of the Solution, three Times a Day, for three Days.

May 28th.

The Solution yeſterday excited Nauſea, retching, and Vomiting, and cleared her Stomach of much ſlimy Matter; yet cauſed a Swelling of the Belly, which has continued, although regular for Stools. She had a ſtrong Fit of the Ague yeſterday.

Ordered half an Ounce of the Tincture of Rhubarb immediately; and after the Operation, to repeat the Solution, for three Days.

June 1ſt.

The Tincture procured two Stools, and relieved the Swelling. The Solution has agreed tolerably well with her Stomach and Bowels, and ſhe has miſſed two Fits.

After two Days Intermiſſion, ordered to repeat the Solution, for three Days.

June 8th.

The Solution cauſed ſometimes a ſlight Nauſea; but no other Effect: No Return of Ague.

June 15th.

No Fits for nineteen Days; Appetite good, and gains Strength very faſt.

CASE

CASE XIV.

THOMAS PRESTON, of Sommerfield, aged 16, admitted an In-Patient, July 17th 1784. He has been afflicted with a quartan and tertian Ague for three Months paſt; during which Time he has uſed ſome Medicines, that ſuſpended it once for a Fortnight: Stools regular.

Ordered ten Drops of the Solution, three Times a Day, for four Days.

July 24th.

He has had a ſlight Nauſea, with every Doſe of the Medicine, and but one Fit of the Ague: Appetite very good.

Ordered to repeat the Solution for four Days.

July 28th.

Effects of the Solution juſt the ſame, and no Return of Ague. His Medicine omitted.

Auguſt 1ſt.

Diſcharged cured.

CASE XV.

JAMES DALTON, of Abbot's Bromley, aged 22, admitted an In-Patient, July 30th, 1785.

1785. He has been affected with a quotidian and tertian Ague, alternately for twelve Weeks paſt, which for theſe laſt twelve Days has reſumed the tertian Type. His Sleep natural, Appetite good, and Body much bound.

Ordered immediately a two Ounce Draught of equal Parts of the cathartic Mixture, and the compound Tincture of Sena †; and after its Operation, fourteen Drops of the Solution, three Times a Day, for four Days.

Auguſt 4th.

The purging Draught gave three looſe Stools; and the Solution produced griping Pains, but no Evacuation; and he is again become coſtive. The Fits are milder, and he has no ſhivering Senſation in the cold Stage.

Ordered an Ounce of the cathartic Mixture immediately; a Scruple of Dover's Powder at Bed-time; and to proceed the Night following with the Solution as before.

Auguſt 6th.

He had two relieving Stools with the Draught, a copious Sweat from the Powder, and his Bowels were quite eaſy, until he repeated the Solution,

† Tinctura Sennæ Compoſita. Ph. Ed.

Solution; ſince which he has been very much griped; although not ſo coſtive as he was. He has had no Fits ſince laſt Report.

Ordered fourteen Drops of the Solution, with five Drops of the thebaic Tincture, twice a Day, for four Days.

Auguſt 10th.

The Solution combined with the Laudanum, did not give the leaſt Diſturbance. He continues free from the Ague, and has no Complaints.

CASE XVI.

Auguſt 23d. 1785.

SARAH SIMPSON, of Walton, aged 34, has had a tertian Ague for ten Days, the laſt Fit yeſterday, and was delirious for ſome Time. She has been ſick and vomited, in every hot Stage of her Ague. Appetite bad; Belly regular.

Ordered three Drops of the Solution, three Times a Day, for four Days.

Auguſt 27th.

It produced no Operation; ſhe has only had one

one ſlight Fit on the 24th, None ſince: Appetite better.

Ordered to continue the Solution for four Days.

Auguſt 31ſt.

No Operation from the Solution; Appetite good, and no Return of Ague.

September 13th.

Continues perfectly free from the Ague.

OBSERVATIONS.

THE Caſe of Elizabeth Williams was treated with moderate Doſes, which proved ſucceſsful; but their operative Effects were accompanied with a Swelling of the Belly, which was relieved by the Operation from the Tincture of Rhubarb.

Preſton's Caſe was alſo treated with moderate Doſes, the operative Effects of which were very ſlight: the Diſeaſe was of long Continuance, and had worn a quartan Type; yet the curative Effect of the Medicine was ſpeedy, for he had but one Fit after he began to uſe it.

The Ague of James Dalton was radically cured by the Solution, which however occaſioned diſagreeable griping Pains, accompanied with

a bound Belly. Theſe troubleſome Effects were removed by the Operations of the cathartic Mixture and Dover's Powder; and the Return of the griping Pains ſeemed to be entirely prevented, by the ſmall Doſes of Laudanum which were added to the Solution.

The next Caſe was that of a Child under four Years old, which was cured by moderate Doſes of the Solution, in eight Days; during which ſhe had only one Fit, and no Operation.

CASE XVII.

WILLIAM WHEELOCK, of Bednal, aged 18, In-Patient, was affected with a quotidian Ague of three Weeks Continuance, which was ſuſpended for three Weeks, by twenty Drops of the Solution, taken twice a Day, for nine Days, in the Space of twelve. After a Fortnight's Relapſe, the Diſeaſe was cured by twenty four Drops of the Solution, taken twice a Day, for eight Days, in the Space of twelve. The Medicine in the firſt Courſe of Treatment, operated as a Laxative, accompanied with ſlight Nauſea and griping; and in the ſecond Courſe as a Laxative, accompanied with Nauſea, and ſometimes Vomiting.

CASE XVIII.

ELIZABETH HALL, of Biſhton, aged 16, was affected with a tertian and quotidian Ague, of three Months Continuance, which was ſuſpended for ſix Days, by her taking

ten Drops of the Solution, three times a Day, for ſix Days, in the Space of eleven. After a Week's Relapſe, ſhe was cured by taking twelve Drops of the Solution, three Times a Day, for eight Days, in the Space of fourteen. The Medicine operated as a Laxative, accompanied with Nauſea and Headach.

CASE XIX.

JOHN HALL, of Walton, Joiner, aged 23, cured of a tertian and quotidian Ague, of twenty-eight Days Continuance, by taking ten Drops of the Solution, three Times a Day, for ſixteen Days, in the Space of five Weeks. It operated as a Laxative, accompanied with Nauſea.

N. B. The Fits were ſuſpended twice, for a ſhort Time during the Treatment, previous to their being entirely removed.

OBSERVATIONS.

THESE three abſtracted Caſes were irregular and tedious.

The Relapſe of William Wheelock, could not be accounted for; he was in the Country when it happened, and poſſibly might catch Cold.

Elizabeth Hall's Relapſe, was probably owing to the Doſes being ſmall, and not continued a ſufficient Time; becauſe when they were rather enlarged,

enlarged, and ſomewhat longer continued, in the ſecond Courſe, the Cure proved ſpeedy and radical.

The two Relapſes of John Hall, I do not think at all difficult to account for; becauſe he was ſubject to occaſional Fatigue from his Buſineſs; his Habit was highly cachectic, and the operative Effects of the Solution, would not allow him to take larger Doſes.

CASE XX.

JOHN BUTLER, of Haughton, aged 16, In-Patient, cured of a quotidian Ague of ſeven Weeks Continuance, by taking eighteen Drops of the Solution, three Times a Day, for eight Days, in the Space of fifteen; during which he had two Fits. It operated as a ſlight Emetic, accompanied with Nauſea.

CASE XXI.

JOB KITE, of Stafford, aged 24, In-Patient, cured of a tertian Ague of twenty-ſix Weeks Continuance, by taking from ſixteen to twenty-eight Drops of the Solution, three Times a Day, for five Days; during which he had no Fits. The Medicine operated as a Cathartic, accompanied with griping Pains.

N. B. Theſe Effects were much relieved, by his taking two Drams of the Paregoric Elixir, at Bed-time, for two Nights.

CASE XXII.

MARY SMITH, of Stafford, aged 19, Out-Patient, cured of a tertian Ague of eight Days Continuance, by taking twenty-eight Drops of the Solution, twice a Day, for four Days; during which ſhe had but one Fit. It operated conſtantly as an Emetic, accompanied with Nauſea.

CASE XXIII.

WILLIAM BAYLEY, of Newcaſtle, aged 36, In-Patient, cured of a tertian Ague of ſix Days Continuance, by taking twenty Drops of the Solution, three Times a Day, for eleven Days, in the Space of ſixteen. The Medicine operated as a Cathartic and ſlight Emetic, accompanied with Nauſea, but without Griping.

CASE XXIV.

WILLIAM POVEY, of Pelſal, aged 32, In-Patient, apparently cured of a quotidian, tertian, and quartan Ague, of ſix Months Continuance, by taking twenty-eight Drops of the Solution, twice a Day, for five Days, in the Space of ſeven; during which he had but one Fit. It operated as an Emetic and Cathartic, attended with Nauſea aud Griping.

OBSER-

OBSERVATIONS.

THE four abſtracted Caſes, from Butler to Bayley incluſive, are Examples of radical Cures from large Doſes of the Solution; the operative and curative Effects of which were ſtrongly marked; and yet the former were leſs troubleſome, than one could reaſonably expect, from the Largeneſs of the Doſes.

In Povey's Caſe, I have only ſaid *apparently* cured, becauſe the Ague having exiſted for ſix Months, and the laſt four Weeks having aſſumed the quartan Type, rendered it ſomewhat doubtful, whether he might not relapſe; but as I ſaw him no more, after he was diſmiſſed from the Infirmary, it was a preſumptive Circumſtance that he continued well.

CASE XXV.

JOSEPH FOLLOWS, of Stafford, aged 60, In-Patient, cured of a tertian Ague of a Week's Continuance, by taking ten Drops of the Solution, three Times a Day, for four Days; during which he had no Fits, nor any Operation.

CASE XXVI.

PETER TONKS, of Stafford, aged 30, cured of a tertian Ague of nine Days Continuance, by taking ten Drops of the Solution, three Times a Day, for eight Days, in the Space

Space of eleven; during which he had no Fits, nor was the Medicine attended with any Operation.

CASE XXVII.

WILLIAM HARVEY, of Bednal, aged 4, cured of a tertian Ague of a Month's Continuance, by taking three Drops of the Solution, twice and thrice a Day, for ſix Days, in the Space of ten; during which he had no Fit, nor any Operation.

CASE XXVIII.

MRS. T—. from the Neighbourhood of Rugeley, aged 41, cured of a tertian Ague of one Week's Continuance, by taking twelve Drops of the Solution, three Times a Day, for ten Days; during which ſhe had only a threatening Senſation of a Fit, and no Operation.

CASE XXIX.

ELIZABETH MALLAM, of Stafford, aged 51, cured of a tertian Ague of nine Days Continuance, by taking ten Drops of the Solution, three times a Day, for four Days; during which ſhe had only one Fit, and the Medicine was attended with no Operation.

CASE XXX.

FRANCIS COPE, of Acton, aged 16, cured of a tertian Ague of five Days Continuance,

tinuance, by taking ten Drops of the Solution, twice a Day, for three Days; during which he had but one Fit, and no Operation.

CASE XXXI.

LYDIA BAYLEY, of Billington, aged 5, cured of a tertian Ague of four Days Continuance, by taking four and five Drops of the Solution, twice a Day, for ten Days, in the Space of thirteen; during which ſhe had but one Fit, and no Operation.

OBSERVATIONS.

THESE ſeven Caſes are Examples of a taſteleſs Medicine, without any Operation, producing ſpeedy and radical Cures, as if by a Charm: ſuch Inſtances are not very frequent; but when they do occur, they conſtitute a very agreeable Part of our Practice. It alſo deſerves Notice, that although the Doſes were comparatively ſmall, they proved very efficacious; the three firſt Caſes being attended with no more Fits, the fourth with but a threatening Senſation of one, and the three laſt with only one apiece; which affords a ſtrong Argument in Favor of trying the Effects of ſmall Doſes, in delicate Conſtitutions.

CASE XXXII.

ANN THRUSTANCE, of Stafford, aged 37, Out-Patient, cured of a tertian Ague of a Fortnight's Continuance, by taking fourteen Drops

Drops of the Solution, three Times a Day, for eight Days; during which ſhe had no more Fits. The Medicine operated as a Laxative, without Griping.

CASE XXXIII.

SARAH JOHNSON, of Acton, aged 26, cured of a tertian Ague of ſeven Days Continuance, by taking fourteen Drops of the Solution, twice a Day, for five Days; during which ſhe had no more Fits. The Medicine produced no Operation, except a ſlight Nauſea for two Mornings.

CASE XXXIV.

ELIZABETH HODSON, of Acton, aged 9, cured of a tertian Ague of eight Days Continuance, by taking ſix Drops of the Solution, twice a Day, for eleven Days, in the Space of thirteen; during which ſhe had no more Fits. It operated as a Laxative the firſt five Days.

CASE XXXV.

SARAH SPILSBURY, of Rugeley, aged 42, Out-Patient, cured of a quotidian and tertian Ague of five Weeks Continuance, attended with a periodic Headach, by taking from fourteen to eighteen Drops of the Solution, twice a Day, for ſeven Days, in the Space of ten; during which ſhe had no Paroxyſms of either Ague, or Headach. The Medicine operated

rated as a Cathartic, accompanied with a Griping, Swelling of the Abdomen, and Pain of the Stomach.

N. B. The two firſt Effects abated immediately on omitting the Solution, and the two latter were ſoon relieved, by the Operation of an Ounce of the cathartic Mixture.

CASE XXXVI.

ELIZABETH SMITH, of Stafford, aged 3, Out-Patient, cured of a tertian Ague of three Weeks Continuance, by taking two and three Drops of the Solution, three Times a Day, for eight Days; during which ſhe had no more Fits. It cauſed no operative Effect except a Nauſea.

CASE XXXVII.

MARY TRUSFIELD, of Gnoſal, aged 8, Out-Patient, cured of a quartan Ague of twenty Weeks Continuance, by taking ſeven Drops of the Solution, three Times a Day, for five Days; during which ſhe had no more Fits. The Medicine produced Swellings of the Face and Eyes, which came on after the firſt three Doſes, and continued for five Days.

OBSERVATIONS.

IN the ſix preceding Caſes, the curative Influence of the Solution was ſtrongly marked; for the Patients had not the Recurrence of one Fit, after they began the Uſe of the Medicine. The Operation attending the three firſt Caſes and the fifth, were as gentle as could be wiſhed, and in Spilſbury's Caſe, although rather troubleſome, yet thoſe Effects which did not immediately go off on omitting the Solution, were ſpeedily removed by the Cathartic. In Trusfield's Caſe it was obſervable, that the Swellings of the Face and Eyes came on, the Day after commencing the Uſe of the Solution, continued ſtationary for five Days, and then, from the Day after its Diſuſe, ſpontaneouſly went off; and is therefore a very pointed Caſe of Swellings from its Adminiſtration; with which however, the Patient felt no other Inconvenience than a ſtiff or tenſe Senſation of the Parts affected.

CASE XXXVIII.

ISAAC BAYLEY, of Billington, aged 53, cured of a tertian Ague of four Days Continuance, by taking twelve Drops of the Solution, twice a Day, for ſix Days; during which he had but one ſlight Fit, and no Operation, except the Body being gently opened.

CASE

CASE XXXIX.

GEORGE JOHNSON, of Acton, aged 20, cured of a tertian Ague of a Month's Continuance, by taking fourteen Drops of the Solution, twice a Day, for four Days; during which he had but one Fit, and no Operation, except five griping Stools on the fourth Day.

CASE XL.

ELIZABETH CHELL, of Penkridge, aged 60, cured of a tertian Ague of a Month's Continuance, by taking fourteen Drops of the Solution, twice a Day, for five Days; during which ſhe had but one ſlight Fit. The Medicine produced a little Nauſea, accompanied with ſlight griping Pains.

CASE XLI.

DOROTHY TIPPER, from the Neighbourhood of Rugeley, aged 52, cured of a tertian Ague of one Week's Continuance, by taking from eight to ten Drops of the Solution, twice a Day, for five Days, in the Space of nine; during which ſhe had but one ſlight Fit. It frequently operated as an Emetic.

CASE XLII.

ANN WARD, from the Neighbourhood of Rugeley, aged 44, cured of a tertian Ague

of four Days Continuance, by taking twelve Drops of the Solution, twice a Day, for nine Days, in the Space of ſeventeen; during which ſhe had but one Fit. The Medicine operated as a Laxative, accompanied with ſome griping Pains and Nauſea.

OBSERVATIONS.

THESE five Caſes we find were attended with only one Fit each, during the Admiuiſtration of the Solution, and conſidering that it was only adminiſtered twice a Day, and in moderate Doſes, they are good Examples of its Efficacy, accompanied with mild operative Effects.

CASE XLIII.

ANN BAGNALL, of Pillington, aged 35, cured of a tertian and quotidian Ague of two Months Continuance, by taking three Drops of the Solution, three Times a Day, for ſix Days; during which ſhe had only two quotidian Fits. It operated as a Laxative.

CASE XLIV.

JAMES BRINDLEY, of Great Haywood, aged 10, cured of a tertian Ague of four Days Continuance, by taking from eight to twelve

twelve Drops of the Solution, three Times a Day, for five Days; during which he had two Fits, and a Nauſea after each Doſe of the Medicine.

CASE XLV.

LYDIA BRADSHAW, of Salt, aged 65, cured of a tertian Ague of a Week's Continuance, by taking ten and twelve Drops of the Solution, twice a Day, for ten Days, in the Space of fifteen; during which ſhe had two ſlight Fits, and no Operation, except ſome Degree of Nauſea.

CASE XLVI.

ANN WEAVER, of Brockton, aged 16, cured of a tertian Ague of a Fortnight's Continuance, by taking ten Drops of the Solution, three Times a Day, for nine Days, in the Space of thirteen; during which ſhe had two Fits, and no Operation, except a ſlight Nauſea and Anorexia. The latter was relieved, by a gentle Operation from a Doſe of eight Grains of Coloquintida Pills with Aloes, combined with two Grains of Calomel.

CASE XLVII.

HANNAH BOTT, of Stafford, aged 23, Out-Patient, in the third Month of her Pregnancy, cured of a tertian Ague of three Weeks

Weeks Continuance, by taking ten Drops of the Solution, twice a Day, for ſeven Days; during which ſhe had two Fits, and no Operation.

OBSERVATIONS.

THESE five Caſes were attended with two Fits each, during the Adminiſtration of the Solution. The operative Effects of four of them were ſo mild, they would not deſerve Notice, but for the Anorexia attending the Caſe of Ann Weaver, whoſe Appetite was ſpeedily reſtored, by two or three gentle Stools from the Cathartic. The laſt was a Caſe of Pregnancy, and was attended with no Operation from the Medicine, and is therefore an Example of the Conſtitution, not being rendered more ſuſceptible of its operative Effects, from that Circumſtance.

CASE XLVIII.

ANN BRADSHAW, of Salt, aged 27, cured of a tertian Ague of twenty-ſix Days Continuance, by taking ten and twelve Drops of the Solution, three Times a Day, for ten Days, in the Space of fifteen; during which ſhe had three decreaſing Fits, and no Operation, except a ſlight Degree of Griping.

CASE XLIX.

JOHN EMBREY, of Billington, aged 13, cured of a tertian Ague of a Fortnight's Continuance,

tinuance, by taking ten Drops of the Solution, twice and thrice a Day, for nine Days, in the Space of eleven; during which he had four decreaſing Fits, and no Operation.

CASE L.

MISS P---. of B----. aged 30, cured of a quotidian Ague of three Weeks Continuance, by taking ten Drops of the Solution, three Times a Day, for ſix Days, in the Space of eight; during which ſhe had four or five decreaſing Fits, and no Operation.

CASE LI.

JOHN HOLDRED, of Rugeley, aged 26, cured of a tertian Ague of three Days Continuance, by taking from ten to twelve Drops of the Solution, three Times a Day, for ten Days, in the Space of ſeventeen; during which he had three decreaſing Fits. It produced no operative Effect, except a ſlight Nauſea.

CASE LII.

JOHN HODSON, of Acton, aged 4, cured of a quotidian Ague of a Fortnight's Continuance, by taking from three to five Drops of the Solution, twice a Day, for fourteen Days, in the Space of twenty; during which he had ſeven decreaſing Fits. The Medicine operated as a Laxative.

OBSER-

OBSERVATIONS.

THESE five Caſes were accompanied with decreaſing Fits, from three to ſeven each, during the Exhibition of the Solution, and conſequently are Inſtances of its curative Influence, being ſucceſsfully exerted, but in a more gradual Manner than uſual. The Doſes we find were moderate, and attended with little or no Operation.

The whole of this Section contains Caſes of Agues cured by the Mineral Solution, and the moſt of them unexceptionably ſucceſsful. The Agues were more of them Tertians than Quotidians, and only three or four of them Quartans. The Caſes we find were of both Sexes, and marked by very different Ages. The Doſes of the Solution, although ſometimes conſiderably enlarged, were given with cloſe Attention to their Effects, and were generally intermitted for two or three Days, at the Diſtance of every three or four, during the Courſe of their Adminiſtration.

SECT.

SECT. II.

Caſes of Agues, cured by the Aſſiſtance of the peruvian Bark, after Failure by the Mineral Solution, with Obſervations.

CASE LIII.

July 3d. 1784.

GEORGE CHADBORN, of Rugeley, an Adult, an Out-Patient, has been afflicted with a quotidian Ague for a Month paſt. His Stools regular, but Appetite much impaired: he has loſt much Fleſh and Strength, and appears quite pale and cachectic. Many Medicines have been uſed, but without any Suſpenſion of his Fits.

Ordered ten Drops of the Solution, three Times a Day, for four Days.

July 12th.

He has taken the Solution without the leaſt Diſturbance, and has had no Fits for five Days.

Ordered to repeat the Solution for four Days.

July 17th.

No Operation, nor Signs of Ague.

Ordered to continue the Solution for four Days.

July 28th.

He took the Solution, and the Ague kept off till four Days ago, ſince which he has had a Fit every Day.

Ordered fourteen Drops of the Solution, three Times a Day, for four Days.

Auguſt 4th.

He has taken the Solution without Operation as uſual, and has miſſed his Fits ſince the 30th, ult.

Ordered to repeat the Solution for four Days.

He

Auguſt 13th.

He took his Medicine, and the Ague kept off till within theſe few Days. He complains that his Legs have been dropſical, more or leſs, for ſix Weeks paſt, and that they have been very bad for the laſt ten Days. He is this Day admitted into the Infirmary.

Ordered a Courſe of the peruvian Bark, to be purſued in the uſual Manner, until his Ague is cured; and then to take an Infuſion of Tobacco as a Diuretic.

September 2d.

Both Medicines had the deſired Effects, and he was this Day diſmiſſed cured.

CASE LIV.

ANN BEARDMORE, of Baſwich, aged 38, admitted an Out-Patient, Auguſt 17th, 1785, has had a quotidian Ague for ten Days. Her Body is rather bound, and Appetite bad.

Ordered fourteen Drops of the Solution, three Times a Day, for three Days.

Auguſt 20th.

The Solution cauſed a Nauſea, and a Swel-

ling of her Stomach. She has had two milder Fits, and None to Day. Her Body is ſtill bound.

Ordered to take two Table Spoonfuls of the cathartic Mixture immediately; and the antimonial emetic Powder in the Evening; and then to repeat the Solution for two Days.

Auguſt 22d,

The cathartic Mixture and Emetic operated well, and relieved both Sickneſs and Swelling; but the Solution immediately cauſed Loſs of Appetite, and an Uneaſineſs and Swelling of the Stomach and Belly, with ſlight Headach. She has had no Fits for three Days.

Ordered to repeat the cathartic Mixture in the Morning; and then to take a Tea Spoonful of the bitter Tincture in Water, twice a Day.

Auguſt 26th.

The Cathartic operated with Relief to her Stomach, Belly, and Head, and the Tincture was ſerviceable in promoting Appetite. Stools regular, and no Fits for a Week.

Ordered to repeat the Solution twice *a Day, for three Days; and then the Tincture for four Days.*

By

September 5th.

By Miſtake took the Solution, three Times a Day, inſtead of twice, and her Face and Eyes became ſo ſwelled every Morning, ſhe could ſcarce ſee till towards Noon, when they in ſome Meaſure ſubſided. She had an Anorexia all the three Days; but the Appetite returned as ſoon as ſhe ſuſpended the Uſe of the Medicine; and the Swellings gradually went off, whilſt ſhe was taking the Tincture: ſince which however, ſhe has had three Fits of the Ague.

Ordered to omit her former Medicines, and to take an Ounce of the Powder of peruvian Bark, in half Dram Doſes every two Hours, between the Fits.

September 9th.

The Bark has purged her. She has only had one ſhaking Fit ſince the laſt Report.

Ordered to repeat the Solution twice for one Day, and then to take ſix Drams of the Bark, in convenient Doſes, between the Fits, or threatening Senſations of Paroxyſms.

September 12th.

The Solution cauſed Nauſea and Anorexia, but no Swellings: the Bark purged the ſame as before: ſhe has had no ſhivering Fits of ſix Days,

Days, but has feveriſh Symptoms at the uſual Periods.

After two Days Intermiſſion, ordered to take half a Dram of the Bark, with four Drops of the thebaic Tincture, three Times a Day, for four Days.

September 23d.

She believes ſhe caught Cold immediately after the laſt Report, which occaſioned her to have a ſhivering Fit, on the 14th, 15th, and 16th Inſtant; but, during that Time, ſhe took the Bark with the Laudanum, which agreed with her very well, and has had no aguiſh Symptoms for a Week paſt.

Ordered to repeat her laſt Medicines for four Days.

September 30th.

By Miſtake only took the Medicines two Days. They perfectly agreed with her, and ſhe has continued quite well.

CASE LV.

JAMES HALL, of Stafford, aged 20, admitted an Out-Patient, September 11th, 1785, has been affected with a quotidian Ague for a Week paſt. His Appetite is very bad, Body

Body bound, and Habit very pale and cachectic.

Ordered to take fourteen Drops of the Solution, three Times a Day, for four Days.

September 15th.

The Solution made him rather ſick every Time he took it, and Yeſterday it began to operate as a Cathartic. He miſſed his Fit Yeſterday.

Ordered to take a Grain Pill of Opium every Night.

September 18th.

He has only taken the Opium two Nights, ſince which his Looſeneſs has abated; but his Ague returned this laſt Night.

Ordered to take ten Drops of the Solution, three Times a Day, for four Days, with three Drops of liquid Laudanum, in each Doſe.

September 22d.

The Solution ſtill made him ſickiſh, but ſince he took the liquid Laudanum, he has had no Return of Looſeneſs. He has had a Fit every Night, but rather milder.

Ordered

Ordered to take ſix Drams of the Powder of peruvian Bark, in half Dram Doſes, one every two Hours, between the Fits.

October 13th.

He took the Bark, and miſſed his Fits for a Week; but neglecting to attend the Infirmary, he has had a tertian Ague for nine Days paſt, and his Appetite is very bad.

Ordered the antimonial emetic Powder in the Evening; and then to take a Dram of the Bark in Powder, three Times a Day, for four Days, in the Intervals of the Fits.

October 20th.

The Vomit operated well, and with Relief to his Appetite; the Bark agreed with his Stomach, and he has had no Ague for ſix Days.

Ordered to repeat the ſame Doſes of the Bark, three Times a Day, for three Days.

October 30th.

He has taken his Powders, and had no Return of the Ague: his Appetite is much better; but he remains very weak and pale.

Ordered to take two Steel Pills, and to waſh them down

† Miſtura Peruviana. No. 6.

down with an Ounce of the peruvian Mixture †, *with a Dram of aromatic Tincture, and a Scruple of compound Spirits of Lavender, twice a Day, for four Days.*

November 3d.

The Medicines agreed with his Stomach; his Appetite is very good, and he gathers Strength.

Ordered to continue the Medicines for ſeven Days longer.

November 10th.

His Strength is much recovered, and he has no Complaints.

OBSERVATIONS.

THE Relapſes, in the Caſe of George Chadborn, appeared to be occaſioned partly by too ſmall Doſes, and partly by two or three conſiderable Intervals between the Exhibitions of the Solution, from Irregularity in Point of Attendance; for the curative Influence of the Medicine was very obvious, whenever it was taken; and therefore in Auguſt, when he was admitted into the Infirmary, there was good Reaſon to

† Miſtura Peruviana. No. 6.

believe, he might have been cured of his Ague, by an uninterrupted Courſe of the Solution, for eight or ten Days. But as I found his cachectic Habit was now attended with an Œdema of his Legs, extending quite up to his Knees, it appeared the moſt prudent to give him the Bark without Delay. Accordingly I ordered two Ounces of the Bark in Powder, to be divided into proper Doſes, and taken between the Fits, which entirely cured the Ague, and then the dropſical Swellings of his Legs were ſpeedily removed, by the Adminiſtration of Tobacco, acting as a ſtrong Diuretic, as deſcribed in the 11th Caſe of my Reports on the Effects of that Medicine.

Ann Beardmore's Caſe, contains the moſt pointed Example of the Solution, adminiſtered in the common Doſes proper for an Adult, *diſagreeing* with the Conſtitution, which I ever met with, and therefore I have given it at large, both as a Specimen of what I call the collateral Treatment, and alſo as a Proof, that now and then there will be found Caſes, wherein from Idioſyncraſy, the Medicine will not agree; and whenever ſuch Examples are diſcovered, it is the Duty of a prudent Practitioner to give up the Medicine, and try other Means. Such however was the Peculiarity of this Patient's Conſtitution, that the Bark operated with her like a ſtrong Purge, and I am firmly perſuaded, would hardly have cured her, had not that Operation been reſtrained by the Aid of the Laudanum. The Failure of the Solution, in this Caſe,

Caſe, ſeemed to ariſe entirely from the operative Effects preventing her continuing the regular Uſe of the Medicine; becauſe its curative Effects were very obvious, on its firſt Exhibition. The Anorexia and Swellings ſeemed to be ſenſibly relieved, by the Operations of the emetic Powder and cathartic Mixture.

There is little Reaſon to doubt, but if James Hall had attended again in due Time, after the 22d of September, he might have been cured by the Solution; but as the operative Effects of the Medicine proved troubleſome in moderate Doſes, even when corrected by liquid Laudanum, I thought it the moſt eligible to attempt the Cure by the Bark. The Diſagreement of the Solution, in this Caſe, ſeemed to ariſe from Idioſyncraſy, for it is plain that his Stomach was not morbidly delicate, ſince it could bear without Diſturbance, Doſes of the Bark, containing a Dram each, and alſo Steel Pills with a Bark Mixture; by which Means he ſoon recovered from the Ague and Cachexy.

CASE LVI.

SAMUEL HARRIMAN, of Rugeley, aged 16, was affected with a tertian Ague of ſeven Weeks Continuance, which was ſuſpended for three Weeks, by taking eight Drops of the Solution, three Times a Day, for eight Days, in the Space of thirteen; during which

he had only one Fit. The Medicine operated as an Emetic and Cathartic, attended with Griping and Nauſea. On the Relapſe of the Ague, he was ordered the Bark in the uſual Manner, and was cured.

CASE LVII.

RUTH LAWRENCE, of Gnoſall, aged 15, Out-Patient, was affected with a tertian Ague of eight Weeks Continuance. She had it ſuſpended by taking eight Drops of the Solution, three Times a Day, for four Days; but its Adminiſtration being accompanied with ſome Degree of Nauſea, Headach, Pain at the Stomach, and Swelling of the Face, the Cure was finiſhed by the Uſe of the Bark. On omitting the Solution, the Nauſea was no longer excited, and the other operative Effects were ſpeedily relieved, by a moderate Doſe of the cathartic Mixture.

CASE LVIII.

MARY KEELING, of Stafford, aged 19, Out-Patient, was affected with a quotidian Ague of eight Weeks Continuance. She had it ſuſpended for nineteen Days, by taking fourteen Drops of the Solution, three Times a Day, for ten Days, in the Space of fourteen; and ſuſpended again for fourteen Days, by the ſame Doſes given in the ſame Manner, for ſeven Days, in the Space of eleven; and during each Period,

Period, it was attended with no Operation. On the Diſeaſe relapſing a ſecond Time, it was cured by the Uſe of the Bark, exhibited in the uſual Manner between the Fits.

CASE LIX.

ISAAC BAYLEY, of Billington, aged 3, was affected with a quotidian Ague of five Weeks Continuance. It was ſuſpended for five Weeks, by taking three Drops of the Solution, twice a Day, for fifteen Days, in the Space of a Month; and then relapſing, was again ſuſpended for another five Weeks, by taking the ſame Doſes of the Solution, three Times a Day, for ſeven Days, in the Space of eleven. On the ſecond Relapſe, the Habit became dropſical; but both Complaints were cured by a proper Courſe of the Bark, and Cream of Tartar.

CASE LX.

RICHARD THRUSTANCE, of Stafford, aged 7, Out-Patient, was affected with a tertian Ague of nine Days Continuance, which was twice ſuſpended in the Space of thirty two Days, by taking ſix Drops of the Solution, twice a Day, for ſeven Days; and three Times a Day, for nine Days. It operated as a Cathartic, accompanied with Griping. After the ſecond Relapſe, it was cured by a regular Courſe of the Bark.

OBSER-

OBSERVATIONS.

THE Relapſes in Harriman's Caſe ſeemed to be occaſioned, by the too ſmall Doſes of the Solution; but their operative Effects proving troubleſome, they could not be conveniently enlarged; and therefore it was certainly preferable, to attempt the Cure by the Bark, which accordingly ſucceeded.

Lawrence's Caſe with a Relapſe, was attended with troubleſome operative Effects from the Solution; and Keeling's Caſe relapſing twice, after regular Treatment by the ſame Medicine, rendered it eligible to try other Means, and accordingly they were both cured by the Bark.

Iſaac Bayley was only three Years old, and his Habit of Body highly cachectic. His Diſeaſe relapſed, after two Suſpenſions, by the Solution, of five Weeks each. From conſidering his Caſe, it appeared highly probable, that if his Ague was again ſuſpended by the Uſe of the Solution, that his cachectic Habit, now combined with general dropſical Swellings, would diſpoſe him to further Relapſes, unleſs at the ſame Time, his dropſical Swellings could be relieved, and Conſtitution ſtrengthened. I therefore ordered him the Bark, both as a Febrifuge and Corroborant, and the Cream of Tartar as a Diuretic, and he recovered ſurpriſingly from both his Complaints. It deſerves Notice in this Caſe, that three Doſes of the Solution in a Day, for

for ſeven Days, with ſhort Intervals, procured exactly the ſame Period of Suſpenſion of the Fits, as two Doſes in a Day, for fifteen Days, with long Intervals.

The Caſe of Thruſtance was another Example of two Relapſes, after the Fits had been ſuſpended by the Solution; which, being given three Times a Day, and for nine Days, in the ſecond Courſe, would have proved ſufficient for a radical Cure in moſt Caſes. Perhaps larger Doſes might have proved ſucceſsful; but as the operative Effects of the Medicine prohibited ſuch a Trial, and the Diſpoſition of the Diſeaſe to relapſe was ſtrongly marked, it was certainly adviſable to attempt the Cure by the Uſe of the Bark.

CASE LXI.

THOMAS MORETON, of Stafford, aged 14, admitted an Out-Patient, April 6th, 1785, had the tenth Fit of a tertian Ague two Days ago. His Belly regular, and his general Health has been very good.

Ordered to take from ten to twelve Drops of the Solution, three Times a Day, for ſix Days.

April 16th.

No Operation from the Solution. After two Fits

Fits he had an Intermiſſion for four Days; but the laſt three Fits have been quotidian. Appetite good.

Ordered to take fourteen Drops of the Solution, three Times a Day, for three Days.

April 20th.

The Solution frequently makes him ſick, and he has a conſtant Anorexia. Quotidian Fits no better.

After cleanſing his Stomach with ten Grains of Ipecacuanha, ordered to take twelve half Dram Doſes of the Powder of the Bark, one every two Hours between the Fits; and then to repeat the ſame Doſes, four Times a Day, for three Days.

April 27th.

The Ipecacuanha operated three Times, and relieved his Sickneſs and Anorexia. He has taken the Bark, but his Fits are much the ſame.

Ordered to take twelve Doſes of the Bark between the Fits as before, each Doſe containing a Scruple of the Powder, in an Ounce of the Peruvian Mixture.

April 30th.

He has taken the Bark, but the Fits continue the ſame.

Ordered

Ordered to take nine Drops of the Solution, with a Scruple of the Powder of peruvian Bark, in an Ounce of the peruvian Mixture, three Times a Day, for four Days.

May 4th.

The Medicines occaſioned three Stools a Day, with ſome griping Pains; but the Fits are milder.

Ordered to continue the Medicines for a Week; and to take ten Drops of liquid Laudanum, every Night, for the ſame Time.

May 11th.

He has had no Fits ſince laſt Report: the Medicines agreed well with his Bowels; his Appetite is good, and he has no Complaints.

CASE LXII.

WILLIAM HEATH, of Bradley, aged 22, Out-Patient, was affected with an Ague for ten Days, and the laſt ſix Fits were quotidian, which he had twice ſuſpended for a ſhort Time, by taking from fourteen to eighteen Drops of the Solution, twice and thrice a Day, for ſeventeen Days, in the Space of thirty-two. He then took ten Drams of the Powder of peruvian Bark, in half Dram Doſes, at ſhort Intervals, between the Fits, which only ſuſ-

pended the Diſeaſe for a few Days. On its relapſing a third Time, he was ordered to take ten Drops of the Solution, with half a Dram of the Bark, in Powder, three Times a Day, or every eight Hours, without regarding the Paroxyſms, for eight Days, in the Space of twelve, which ſpeedily cured the Diſeaſe, and no Report has been made of any Relapſe. The Solution operated ſometimes as a Cathartic and Emetic, attended with Griping, Nauſea, Gaſtrodynia, and Anorexia; on which Account, he took about four Drops of liquid Laudanum in each Doſe of the Medicine, for ſeven Days; during which he had no Purging, and all the other Effects were rendered much milder.

CASE LXIII.

DOROTHY WARD, of Stafford, aged 30, Out-Patient, being affected with a tertian Ague, of eight Days Continuance, took ten Drops of the Solution, three Times a Day, for three Days; which only operated as a Laxative and ſhortened the two laſt Fits. She then took an Ounce and a Half of the Powder of peruvian Bark, between the Fits, until they were ſuſpended; and after that, three Times a Day, by which Means, the Bark operating as a briſk Purge, the Ague was only ſuſpended for twenty-five Days. On the Relapſe,

lapſe, ſhe took both the Solution and Bark in ſmaller Doſes, and was perfectly cured without any troubleſome Operation.

CASE LXIV.

JOHN KEELING, of Stafford, aged 14, Out-Patient, had a quotidian Ague of eight Weeks Continuance, twice ſuſpended in the Courſe of thirty-three Days, by taking ten Drops of the Solution, three Times a Day, for ſixteen Days; and then cured by taking the ſame Doſes of the Solution, combined with a Scruple of the Powder of the peruvian Bark, three Times a Day, for nine Days, in the Space of eleven. The Solution produced no Operation.

OBSERVATIONS.

IT appears in the Caſe of Thomas Moreton, that from ten to fourteen Drops of the Solution, given three Times a Day, for nine Days, in the Space of thirteen, failed; and that one Ounce and a Half of the Bark in Powder, given in half Dram Doſes, and twelve Doſes of a Scruple each, exhibited in the Bark Mixture, between the Fits, proved ſtill more unſucceſsful, the Solution ſuſpending the Diſeaſe for the Period of four Fits, but the Bark not at all. The ſame Scruple Doſes, however, of the Powder, with the Mixture, combined with nine Drops of the Solution, and adminiſtered

three Times a Day, for eleven Days, ſpeedily and radically cured the Ague. The Operation of the Ipecacuanha we found relieved the Sickneſs and Anorexia from the Solution; and the liquid Laudanum exhibited every Night, obviated the griping Effects of the combined Medicines.

The Caſe of William Heath proved remarkably obſtinate, the Diſeaſe quickly relapſing, after being twice ſuſpended by the Solution, and once by the Bark; but the former, in ſmall Doſes combined with the latter, ſpeedily curing the Diſeaſe, with little or no Operation, affords another ſtriking Example of trying the joint Powers of thoſe Medicines in particular Caſes. In this Inſtance alſo, the Uſe of ſmall Doſes of liquid Laudanum, with a View to moderate the operative Effects of the Solution, in particular the Purging, was clearly evinced.

In the Caſe of Dorothy Ward, the Solution ſeemed to agree very well; but on her informing me at the ſecond Viſit, that ſhe was in the fifth Month of her Pregnancy, I thought it moſt prudent to give her the Bark, of which ſhe took a fair Quantity for obtaining a radical cure; and therefore it is probable, that its purgative Operation was the Cauſe of its only ſuſpending the Fits for a ſhort Time. I then ventured to give her both the Solution and the Bark, but in ſmaller Doſes than when ſhe took

took them ſingly, and by their joint Aſſiſtance, the Ague was ſpeedily and radically cured. Here was a Caſe, in which the Solution was evidently the milder Medicine, and from my later experience, I am now fully convinced, that the Precaution which I took was needleſs; for as it only proved laxative, it might have been continued with great Safety; and I have little Doubt but it would have cured her without the Aid of the Bark.

The Intervals between the Periods of uſing the Solution, in Keeling's Caſe, were probably too long, by which Means the curative Influence of the Medicine was too much divided, and thereby occaſioned the Relapſes. And as the Patient ſeemed to have got a confirmed aguiſh Habit, I am ſtrongly of Opinion that nine Drams of the Bark, in the Space of eleven Days, allowing it to have ſuſpended the Fits, would not have prevented another Relapſe, had it not been combined with the Solution.

SECT.

SECT. III.

Caſes of Agues, ſuſpended, relieved, and not relieved, by the Mineral Solution, from the irregular Attendance of Patients, with Obſervations.

CASE LXV.

ELIZABETH BROUGH, of Great-Haywood, aged 25, Out-Patient, had been affected with a quotidian Ague of eighteen Days Continuance, and had it ſuſpended for a Fortnight, by taking from ten to fifteen Drops of the Solution, three Times a Day, for three Days; during which ſhe had only two Fits. The Medicine operated as a Cathartic, attended with ſome Degree of Griping. On the Relapſe of the Diſeaſe, ſhe was ordered to take fifteen Drops of the Solution, twice a Day, for four Days; but made no Report, from Neglect of Attendance.

CASE

CASE LXVI.

CHARLES PERKINS, of Stafford, aged 19, Out-Patient, had been affected with a tertian Ague, of ſeven Weeks Continuance, and had it ſuſpended for a Fortnight, by taking ſixteen Drops of the Solution, three Times a Day, for eight Days; during which he had only one Fit and no Operation. On the Relapſe of the Ague, he was ordered to repeat the Solution for three Days; during which he had only one Fit, and no Operation. He was then ordered to continue the Medicine for ſome Days longer, in order to prevent another Relapſe; but made no Report, from Neglect of Attendance.

CASE LXVII.

WILLIAM GOODWIN, of Stafford, aged 19, Out-Patient, was affected with a tertian and quotidian Ague, of five Weeks Continuance. He had it ſuſpended for a Fortnight, by taking twelve Drops of the Solution, twice and thrice a Day, for ſix Days; during which he had three quotidian Fits. The Medicine operated as an Emetic and Laxative, accompanied with Nauſea. On the Relapſe of the Diſeaſe, he was ordered to take twelve Drops of the Solution, three times a Day, for three Days; but made no Report, from Neglect of Attendance.

CASE

CASE LXVIII.

HANNAH COOPER, of Stafford, aged 15, Out-Patient, had been affected with a tertian Ague of a Month's Continuance, accompanied with Jaundice, and had the Fits rendered milder, by taking ten Drops of the Solution, three Times a Day, for three Days. The Medicine operated as a Laxative, attended with a Griping and ſlight Nauſea. She was ordered to continue it, for three Days longer, but made no Report, from Neglect of Attendance.

CASE LXIX.

ELIZABETH FOX, of Salt, aged 25, Out-Patient, had been affected with a tertian Ague of five Weeks Continuance, and had the Fits rendered milder, by taking fourteen Drops of the Solution three Times a Day, for four Days. The Medicine was attended with no Operation, except a ſlight Griping. It was ordered to be repeated for three Days longer; but no Report was made, from Neglect of Attendance.

CASE LXX.

JOSEPH HODGSON, of Haughton, aged 50, Out-Patient, was affected with a quartan Ague for five Weeks, and then took from fourteen to eighteen Drops of the Solution, three times

times a Day, for five Days, without Relief. The Medicine proved ſomewhat emetic, and was accompanied with a ſlight Griping and Nauſea. He was ordered to continue it for four Days longer, but made no Report, from Neglect of Attendance.

OBSERVATIONS.

IN the three firſt Caſes, the Solution was adminiſtered from three Days to eight, and ſuſpended the Diſeaſe for a Fortnight in each. In the fourth Caſe it was given for three Days, and in the fifth Caſe for four Days, and rendered the Fits milder. In the ſixth Caſe, it was exhibited for five Days, and procured no Relief.

I believe there are no Gentlemen of the Faculty, who have had the Care of Patients attending either Hoſpitals, or Diſpenſaries, but have frequently experienced their Irregularity in Point of Attendance. The preceding Caſes were all Examples of this Kind. They were for that Reaſon unſatisfactory, and if ſome mention of them had not ſeemed neceſſary, in order to give an impartial View of the Practice, I ſhould have been glad to have omitted them altogether.

Imperfect however as the Caſes may appear, which have come under this Deſcription, they are not altogether uſeleſs in Point of Infor-

mation; for in Proportion to the Time, that the Solution was adminiſtered, its curative Influence was generally as obvious, as in more perfect Caſes.

SECT. IV.

Caſes of remitting Fevers, treated by the Mineral Solution, with Obſervations.

MY Experience of the Mineral Solution, has been principally exerciſed in the Treatment of Agues; but ſome Caſes of remitting Fevers, and periodic Headachs, happening to occur during the Practice, I was encouraged to treat them with the ſame Medicine, the Reſult of which ſhall be the Subject of this Section.

CASE LXXI.

March 30th, 1784.

CHARLES MARSHALL, of Acton, middle aged, a Labourer, complains of Headach, Thirſt, Anorexia, and Want of Sleep; Skin hot, Tongue very white, and Pulſe 120 Srokes in a Minute: Bowels rather griped; but

but Stools regular. He has a periodical Increaſe of his Fever every other Day. The feveriſh Symptoms came on eight Days ago and the tertian Type is very diſtinct: the laſt Exacerbation was Yeſterday.

Ordered to take from fourteen to twenty Drops of the Solution, twice a Day, for ſix Days.

April 6th.

He took fourteen Drops of the Solution twice a Day for two Days, which cauſed a ſlight Nauſea, with an eaſy Stool each Day, and with relief from Griping, during which he had a Paroxyſm, but his feveriſh Symptoms were ſenſibly abated. He then took twenty Drops of the Solution, twice a Day, for four Days, which cauſed a greater Nauſea, and two looſe Stools a Day, but no Griping; during which he has had no more Paroxyſms: his feveriſh Symptoms are quite gone, and his Pulſe beats only 72 Strokes in a Minute. He makes no Complaints but of general Languor and Debility accompanied with Loſs of Appetite.

Ordered the antimonial emetic Powder immediately; and then to take twelve Drops of the acid Elixir of Vitriol in Water, twice a Day.

April 11th.

The Emetic operated three or four Times with great Relief to his Appetite, which ſeems

alſo to be much improved by the Uſe of the Elixir. He gathers Strength daily, and has no Complaints.

CASE LXXII.

July 13th, 1784.

JOHN HARPER, of Acton, aged 53, has had feveriſh Symptoms for ſeven Days paſt, attended with an Exacerbation every other Day, and a violent periodic Headach. His Body was bound, but is now open by the Uſe of Medicine. Appetite impaired, and Tongue white.

Ordered ten Drops of the Solution, three Times a Day, for four Days.

July 17th.

The Solution made him ſick, and retch ſeveral Times; he had no Exacerbation laſt Night, Body bound, and Appetite worſe.

Ordered to take two Grains of Calomel, combined with eight Grains of Rufus's Pill, immediately; and after an Interval of two Days, to repeat the Solution for ſix Doys.

July 31ſt.

He had two Stools with the Pills, and Appetite relieved, but was again impaired on repeating

repeating the Solution, and has become better again ſince he finiſhed the Medicine, which produced no other operative Effect. No Paroxyſms either of Fever, or Headach ſince laſt Report.

CASE LXXIII.

January 28th, 1786.

SARAH SIMPSON, of Walton, aged 4, has had very feveriſh Symptoms for 6 Days, accompanied with the tertian Type: ſhe frequently retches and vomits; Body griped, yet Stools are regular.

Ordered four Drops of the Solution, three Times a Day, for ſeven Days, and three Drops of liquid Laudanum, every Night.

February 6th.

No Operation from the Solution, and griping Pains ſeem to be relieved by the liquid Laudanum. She had quotidian Exacerbations for three Days, ſubſequent to the laſt Report; none ſince, except a threatening Senſation of a Paroxyſm Yeſterday.

Ordered to repeat the Solution for eight Days.

Feb.

February 25th.

The Solution gave no Diſturbance, ſhe has had no Return of Paroxyſms, but continues quite well.

OBSERVATIONS.

MARSHALL's Caſe was very diſtinctly marked by the tertian Type; and altho' he only took the Solution twice a Day, for ſix Days, it was equally as ſucceſsful as in ſimple Agues; for he had only two Exacerbations, during the Uſe of the Medicine, the operative Effects of which were very mild.

The remitting Fever of Harper was chiefly remarkable, from the tertian Exacerbations being attended, with correſponding Paroxyſms of violent Headach, which however we find occurred but once, after he began the Uſe of the Solution, the operative Effects of which, although troubleſome, were very ſupportable: The Anorexia in this Caſe was very pointed, and the Removal thereof ſeemed to be accelerated, by the gentle Operation of the opening Pills.

Sarah Simpſon was cured of a tertian Ague in Auguſt laſt, by the Uſe of the Solution*, and now of a remitting Fever by the ſame Medicine.

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* Vide Caſe xvi.

dicine. She had enjoyed a good State of Health, during the Interval of the two Diſeaſes. It was obſervable that the tertian Exacerbations, as ſoon as ſhe began the Uſe of the Medicine, became quotidian, and that on the fifth Day of the Suſpenſion of the Fever, ſhe had a threatening Senſation of a Relapſe, which occaſioned a Repetition of the Solution, for eight Days, by way of Prevention.

CASE LXXIV.

ELIZABETH STOCKLEY, of Acton, aged 21, Out-Patient, cured of a remitting Fever, with the tertian Type, of three Weeks Continuance, by taking from ten to fourteen Drops of the Solution, three Times a Day, for ſeven Days; during which ſhe had three Exacerbations, and no Operation.

CASE LXXV.

ANN ADDERLEY, of Gnoſall, aged two Years and a half, Out-Patient, cured of a remitting Fever, with the quotidian Type, of two Weeks Continuance, by taking two Drops of the Solution, twice a Day, for eight Days; during which ſhe had no Operation, and only two tertian Exacerbations.

CASE LXXVI.

ELIZABETH CARTER, of Stafford, aged two Years and a half, Out-Patient, cured of a remitting Fever of near a Week's Conti-

Continuance, by taking three Drops of the Solution, twice a Day, for three Days; and three Drops, three Times a Day, for four Days. The Medicine operated as a ſlight Emetic, accompanied with Griping, Purging, and Nauſea.

CASE LXXVII.

ANN WHISTANCE, of Penkridge, aged 63, had a remitting Fever with the tertian Type for near three Weeks, which was ſuſpended for a ſhort Time, by her taking ten Drops of the Solution, three Times a Day, for four Days; but being threatened with a Relapſe, the Cure was compleated by the Uſe of the Bark, and volatile Alkali. The Solution operated as a Cathartic, attended with Griping and Nauſea.

CASE LXXVIII.

MARY BAKER, of Whitgrave, aged 4 Years and a Half, had a remitting Fever, with the tertian Type for a Fortnight, which was ſuſpended for ſeventeen Days, by her taking four Drops of the Solution, three Times a Day, for eight Days; during which ſhe had only two Exacerbations, and no Operation except Griping.

CASE LXXIX.

MARY SIMPSON, of Stafford, aged 29, In-Patient, was affected with a remitting Fever of a Month's Continuance, accompanied with

with the tertian Type, for which ſhe took fourteen Drops of the Solution, three Times a Day, for three Days, without Relief. The Medicine produced no Operation, except a Griping.

OBSERVATIONS.

THE Caſes of Stockley and Adderley are good Examples of Succeſs from the uſual Courſe of the Solution, with the agreeable Circumſtance of being attended with no Operation. Carter's Caſe was radically cured by a Courſe of the Solution, continued only for four Days; but the operative Effects were ſmart, and rather troubleſome.

In the Caſe of Whiſtance, the curative Effects were obvious, from the Exhibition of the Solution for four Days; but the operative Effects being troubleſome, and the Patient threatened with a Relapſe, it appeared moſt prudent to complete the Cure by other Medicines.

The Caſe of Baker was very ſucceſsful, and the Circumſtances attending it, not unfrequent in the Treatment of Agues: a Courſe of the Solution for eight Days, with only two Paroxyſms, and Operation mild.

In Mary Simpſon's Caſe, the Solution produced no Relief; but then it was only exhibited three Days.

A Girl of 7 Years old, was cured of a remitting Fever with the quotidian Type, by a Courſe of the Solution, for ſeven Days, without any Operation; and a Child, aged 3, was cured of the ſame Fever, with the ſame Type, and alſo a Relapſe, by two Courſes of the Solution, in the Space of a Month, with little or no Operation.

A Boy alſo aged 5, had a remitting Fever, with the tertian Type, cured by a ſhort Courſe of the Solution, without any Operation: and a male Infant of a Year old, was cured of the ſame Fever, with the quotidian Type, of four Weeks Continuance, by a Courſe of the Solution for five Days; during which he had no more Exacerbations; but the operative Effects were rather troubleſome.

Two Women alſo about 23 years of Age, had a remittent Fever with the tertian Type, ſuſpended only for a ſhort Time, by the uſual Courſe of the Solution. In one of them it was attended with no Operation; and in the other, it operated as a Laxative, accompanied with ſome Griping.

It was alſo adminiſtered to another Woman of the ſame Age, affected with a remitting Fever, without Relief; but then it was only continued for two Days, on Account of the operative Effects proving troubleſome, which Circumſtance rendered it more probable than otherwiſe, that had the Medicine been continued the uſual Courſe,

Courſe, its curative Influence might have been obſervable. Hence the Mineral Solution has been tried in ſixteen Caſes of remitting Fevers, namely, ten cured, four ſuſpended, and two not relieved.

SECT. V.

Caſes of periodic Headachs, treated by the Mineral Solution, with Obſervations.

CASE LXXX.

JOHN LAMBERT, from the Neighbourhood of Rugely, aged 57, admitted an Out-Patient, March 19th, 1784. He had a tertian Ague a Month ago, which after four Fits was cured by the Bark, and quickly ſucceeded by violent periodic Pains on one Side of his Head, affecting the correſponding Eye and Temples, and continuing for twelve Hours every Day. Body coſtive, Appetite good when the Pains are abſent.

Ordered to take from twelve to eighteen Drops of the Solution, twice a Day, for four Days.

March 26th.

It operated as a Laxative, without Griping, and he has only had four decreaſing Fits, the laſt, three Days ago.

After a further Intermiſſion of the Solution, for two Days, ordered to take eighteen Drops twice a Day, for four Days.

April 3d.

The Solution procured three Stools a Day, without griping: no Return of periodic Pains.

Ordered fourteen Drops of the Solution, three Times a Day, for four Days.

April 16th.

The Effects of the Solution the ſame, and he has been free from all Pains for twenty-four Days.

CASE LXXXI.

ANN BENTLEY, of Staffordſ, aged 58, cured of a quotidian Headach of nineteen Days Continuance, by taking fourteen Drops of the Solution, twice and thrice a Day, for three Days; during which ſhe had no more Paroxyſms. The Medicine only excited a Nauſea.

CASE LXXXII.

ELIZABETH HOUGH, of Milwich, aged 25, Out-Patient, cured of a quotidian Headach of five Weeks Continuance, by taking from fourteen to twenty Drops of the Solution, twice a Day, for ten Days, in the Space of eighteen; during which ſhe had five or ſix decreaſing Fits. The Medicine produced a Nauſea, and a ſlight Griping.

CASE

CASE LXXXIII.

ELIZABETH BIRCHALL, of Stafford aged, 35, In-Patient, cured of a quodian Headach, of near three Weeks Continuance; by taking ten Drops of the Solution twice a Day, for ten Days, in the Space of ſixteen, without any Operation; during which ſhe had ſeveral decreaſing Fits.

CASE LXXXIV.

JAMES HALL, of Stafford, aged 20, Out-Patient, cured of a quotidian Headach, violently affecting his Forehead and Eyes, for ſeveral Hours together, for theſe ſeven Days paſt, by taking eight Drops of the Solution, twice a Day, for four Days; during which he had but one ſlight Fit, and no Operation.

N. B. He was ordered to take eighteen Drops twice a day, but by Miſtake took only eight.

CASE LXXXV.

SARAH SPILSBURY, aged 42, Out-Patient, cured of a periodic Headach, of five Weeks Continuance (four Weeks with the quotidian Type, and one Week with the Tertian) by taking from fourteen to eighteen Drops of the Solution, twice a Day, for ſeven Days, in the Space of ten; during which ſhe had no more Fits. The Medicine operated as a Cathartic, accompanied with Griping and Swelling of the Belly.

CASE

CASE LXXXVI.

SARAH ELDERSHAW, of Stafford, aged 23, Out-Patient, was affected with a quotidian Headach, of ſix Days Continuance, and had the Paroxyſms rendered milder, by taking fourteen Drops of the Solution, three Times a Day, for three Days. It operated as a ſlight Emetic, attended with Nauſea and Griping. She was ordered to repeat the Medicine for four Days; but made no Report from Neglect of Attendance.

OBSERVATIONS.

OF theſe ſeven Caſes of periodic Headachs, ſix were radically cured by the Mineral Solution, but with different Degrees of Succeſs. Lambert's Caſe was a pointed Inſtance of the Efficacy of the Solution, in a periodic Headach of ſome Continuance; for he had only four quotidian Fits, during its Uſe, and theſe were progreſſively milder. Bentley's Caſe was ſtill more ſtriking; for although ſhe had the Diſeaſe regularly for nineteen Days, and only took the Solution three Days, yet ſhe had not the Recurrence of one Fit, after ſhe commenced the Uſe of the Medicine: the Cure was radical and the Operation mild. The Caſes of Hough and Birchall, although of conſiderable Duration, were alſo ſucceſsfully treated by the Solution. Hall had only one Fit during the Treatment, which was ſomewhat extraordinary, becauſe the Doſes of the Medicine, by Miſtake, were comparatively

paratively very ſmall. In Spilſbury's Caſe, the operative Effects of the Solution were troubleſome; but the Cure was ſpeedy and pointed; for the Diſeaſe had exiſted five Weeks; and yet during the Treatment, he had not the Recurrence of one Fit. And in Elderſhaw's Caſe, the curative Virtue of the Medicine was obvious, although it was uſed but for three Days; and it is probable had ſhe continued her Attendance, the Treatment would have proved ſucceſsful.

SECT. VI.

Formulæ Medicamentorum; with Obſervations.

SOLUTIO MINERALIS. No. 1.

RÉCIPE Arſenici albi in Pulverem ſubtiliſſimum triti,
Salis alkalini fixi vegetabilis purificati, ſingulorum Grana Sexaginta quatuor,
Aquæ fontanæ diſtillatæ Libram dimidiam.

Immittantur in Ampullam florentinam, quâ in Balneo Arenæ poſitâ, Aqua lente ebulliat, donec Arſenicum perfectè ſolutum fuerit. Deinde Solutioni frigidæ adde

Spiritus Lavendulæ compoſiti Unciam dimidiam,
Aquæ fontanæ diſtillatæ Libram dimidiam, plus vel minus, adeo ut Solutionis Menſurâ Libra una accurata

curata ſit, vel potius Pondere Unciæ quindecim cum dimidia.*

PULV. EMETICUS ANTIMONIALIS, No. 2.

Recipe Pulveris Radicis Ipecacuanhæ Grana decem,
Tartari Emetici Granum unum.
Miſce, fiat Pulvis.

MISTURA CATHARTICA. No. 3.

Recipe Infuſi Senæ communis Uncias quatuor, in quo ſolve
Salis Cathartici Amari Unciam unam,
cui adde
Tinctura Senæ Unciam unam.
Miſce.

ELECTARIUM APERIENS. No. 4.

Recipe Electarii Lenitivi Unciam Unam,
Cryſtallorum Tartari in Pulverem tritorum Drachmas duas,
Radicis Jalapii in Pulverem tritæ Drachmam unam,
Syrupi ſimplicis quantum ſatis ſit.
Miſce, fiat Electarium.

PILULÆ

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* I have ſaid, VEL POTIUS PONDERE, becauſe Weight is a much more accurate Method of aſcertaining Proportions than Meaſure, in the preparing of Medicines of great Activity, of which Sort the Mineral Solution is a ſtrong Example. It is perhaps ſuperfluous to remind the Reader, that Troy Weight (which differs materially from Avoirdupois) is always implied in medicinal Preſcriptions.

PILULÆ CHALYBEATÆ. No. 5.

Recipe, Salis Martis,
Extracti Radicis Gentianæ, ſingulorum Drachmas duas,
Pulveris Radicis Glycyrrhizæ quantum ſufficiat.

Miſce pro Maſſa, de qua formentur Pilulæ ſexaginta.

MISTURA PERUVIANA. No. 6.

Recipe Corticis Peruviani craſſe in Pulverem redacti Unciam unam,
Aquæ Fontanæ Libras duas,
Coque ad Colaturæ Uncias quindecim,
cui adde
Aquæ Piperis Jamaicenſis, Ph. Ed. Unciam unam.

Miſce.

OBSERVATIONS.

THE firſt Medicine is a chemical Preparation, as ſimple as could be wiſhed for, and if proper Care be taken that the Solution of the Mineral is complete, it will be found of a certain and uniform Degree of Strength. Its being

alſo in a liquid Form, renders it convenient, for adminiſtering by Drops, and thereby nicely varying the Doſes, according to the Exigencies of the Caſe; a Matter of ſome Importance, where the Activity of the Medicine is ſo great.

The ſmall Proportion of compound Spirits of Lavender is added, merely for the Sake of giving it a medicinal Appearance, leſt, from its being colourleſs and taſteleſs, thoſe Patients who may happen to be intruſted to drop it for themſelves, ſhould be tempted to uſe it with too great Freedom; the Conſequences of which might frequently prove troubleſome, if not ſometimes dangerous.

To a Pint of the Solution, ſixty-four Grains were added, for the Purpoſe of a more ready Calculation; therefore one Ounce of the Solution contains exactly four Grains of the Mineral and conſequently each Dram, juſt Half a Grain. I have found by repeated Trials of dropping the Solution, from a two Ounce Vial (with a broad Margin) little more than half full, that each Dram, by a two Ounce graduated Glaſs Meaſure, contains about eighty Drops.

We ought to be well aſſured, that the fixed vegetable Alkali we make Uſe of is perfectly pure; for that which is bought of the Druggiſts is frequently ſo impure, as to be inadequate for the Purpoſe of producing a perfect Solution of the Mineral; a Circumſtance which would occaſion great Confuſion and Uncertainty, in the Doſes

Doſes of the Medicine. If therefore any One deſirous of preparing the Mineral Solution, ſhould not be provided with the pure Alkali, and would not chooſe to be at the Trouble of purifying it, a double Proportion of purified Nitre (which is a Preparation of ſome Certainty, and ſuppoſed to be always at Hand) may be ſubſtituted; for the Arſenic having the Property of diſcharging the nitrous acid, will unite with the Alkali.

The Formula which I have given with the Alkali, contains my own Preparation, alluded to in the Preface, and is that on which my Experience is chiefly founded. Mr. Hughes has likewiſe uſed it prepared with Nitre, and on Trial found it equally efficacious. I have alſo uſed it a Number of Times, and found it ſucceſsful, and believe the two Solutions to be the ſame Medicine, provided they are accurately prepared with either of the purified Salts.

The Nature and Virtues of the other Medicines will appear obvious on a ſlight Examination of the Formulæ, and are inſerted here, in order that the plain Narrative of Facts might not be impeded by the Intervention of a few Latin Preſcriptions. They are only a ſmall Part of a larger Collection, compoſed for Hoſpital Practice; in which I have been deſirous to unite Efficacy, with Simplicity and Œconomy.

SECT. VII.

Obſervations on the Doſes, and Mode of adminiſtering the Mineral Solution, in the Cure of Agues, interſperſed with practical Rules and Cautions.

THE Mineral Solution I have adminiſtered to Adults, with very conſiderable Latitude, from ten Drops twice a Day, to more than double that Number thrice a Day, and have cured Agues both by the extreme, and all the intermediate Doſes. Large Doſes, however, exhibited three Times a Day, and with ſhort Intermiſſions, are found to be more efficacious, than ſmall ones, given twice a Day, and with long Intervals; but as the operative Effects of moderate, or intermediate Doſes, are by no Means ſo troubleſome and diſtreſſing to the Patient, as thoſe of larger ones, and yet are found to be ſufficiently ſucceſsful, they certainly ought to be preferred. It is therefore very

very neceſſary to adopt ſome Method, for proportioning the Medicine; but as this may admit of ſome Difficulty, with regard to particular Conſtitutions, from Circumſtances which cannot always be eaſily diſcriminated, I believe it will be found more uſeful for general Practice, to ſuppoſe Conſtitutions nearly alike upon an Average; and to regulate the Number of Drops to be given, by the Age of the Patient, from the Period of Infancy to that of Manhood, as the moſt certain Baſis for eſtabliſhing general Doſes. Accordingly I have drawn up the following Table.

A Table of the Doſes of the Mineral Solution.

Patients according to their Ages	*are to take*	*The Solution, in the following Doſes.*
Years.		Drops.
From 2 to 4	to take from	2 or 3 to 5
----- 5 -- 7	-- ----- -----	5 -- 7
----- 8 -- 12	-- ----- -----	7 -- 10
----- 13 -- 18	-- ----- -----	10 -- 12
----- 18 & upwards,	-- -----	12

From this tabular View it will appear, that from five Years old to ſeven the Doſes may be proportioned, by allowing a Drop for each Year; but that a Drop for each Year under that Period

Period is ſcarce ſufficient †, and ſoon becomes too much beyond it, twelve Drops being a medium Doſe for an Adult.

The Hours for taking the Solution, when ordered three Times a Day, being at ſix o'Clock, two o'Clock, and ten; and when twice a Day, at ten in the Morning, and ten in the Evening, have been mentioned in the Advertiſement, for the Information of the Reader, whilſt peruſing the Caſes. I have only to add, that thoſe Hours are to be adhered to, whether they coincide with the Paroxyſms of Fever or not, and that

† The Doſes of the Solution for Children, being found to be larger in Proportion to their Years than for Adults, is agreeable to what has been obſerved by Many, with Regard to other Medicines of the ſtimulant Kind in general, of which antimonial and mercurial Preparations are ſtriking Examples. But I have Reaſon to believe that this Obſervation ought to be entirely reverſed with regard to Tobacco. In my Reports on that Medicine, Page 79, ſpeaking of young Subjects, I remarked that I had met with ſeveral Inſtances in Favor of this Opinion, and ſince that Time ſeveral more have occurred. For although eighty Drops of the Infuſion of Tobacco be a medium Doſe for a Man of twenty Years of Age; yet a Boy of five, in general, cannot bear twenty Drops without being ſenſibly more affected than the Adult. Many Inſtances alſo have occurred of the ſame Kind, in the Courſe of my Practice, with regard to the Exhibition of Opiates to Children and Infants, eſpecially the latter. Hence a Queſtion of ſome Importance in Practice ſeems to be ſuggeſted. Do Children and Infants in Proportion to their Ages, require ſmaller Doſes than Adults, of all the more powerful Narcotic Medicines, ſuch as Opium, Hemlock, Foxglove, Tobacco, woody Nightſhade, &c? Becauſe if this is really the Caſe, the proportioning the Doſes of the uſeful Medicines of this Claſs for Children and Infants, being on a Scale, juſt the reverſe of that by which ſtimulant Medicines have uſually been adminiſtered, becomes an IMPORTANT DESIDERATUM,

that I have not hitherto found the leaſt inconvenience from obſerving the ſame Rule, when from the Failure of the Solution, I have in ſome Inſtances combined it with the Peruvian Bark, provided the Doſes of the latter were moderate.

In Caſes of Agues in general, let the preceding Doſes of the Solution, according to the Age of the Patient, be adminiſtered three Times a Day, for five Days; at the End of which, the Fits being ſuſpended, let the Uſe of the Medicine be omitted for two or three Days, and then repeated for three Days more, in order to prevent a Relapſe.

This is the moſt general Direction, relative to the Uſe of the Solution in the Treatment of Agues; but will require a conſiderable Number of Exceptions and Qualifications, in the Courſe of Practice.

If there is no Suſpenſion of the Paroxyſms during the Courſe of five Days, and the Solution has been attended with moderate operative effects, the ſame Doſes ought to be continued, without Interruption, for three Days longer; or if the Medicine has been attended with no Operation during the ſaid Period, the Doſes may be gradually enlarged during the ſaid ſubſequent three Days, but not to exceed one fourth part more than the former Doſe. At the Expiration of eight Days, if the Suſpenſion has taken Place, order the Medicine to be omitted and repeated, agreeable

to

to that Part of the general Direction, which relates to the Prevention of a Relapſe.

If, after a ſucceſsful Adminiſtration of the Solution, a Relapſe of the Diſeaſe is occaſioned by catching cold, caſual Intemperance, extraordinary Fatigue, or any other accidental Cauſe, the ſame Courſe of the Medicine ought to be ſpeedily repeated without Variation.

Or if no ſuch Cauſe or Circumſtance has occaſioned the Relapſe, and the Medicine has been given only *twice* a Day, or in *ſmall* Doſes three Times a Day; or if the medicinal Courſe has been ſhorter than uſual; or it has been interrupted by too long Intermiſſions, and the operative Effects in general have not been at all troubleſome; in all ſuch Caſes, a more full and efficient Trial of the Medicine ought to be made; either by prudently enlarging its Uſe, or by correcting any Inaccuracy or Defect in the former Treatment, ſo as to render its Application more pointed *.

But if no Suſpenſion of the Fits has taken place, during the uninterrupted, protracted Courſe of eight Days; or if a Relapſe has occurred within a ſhort Time, after a regular Courſe of the Medicine, without any obvious Cauſe; or is ſuſpected to prove obſtinate and difficult

* Several Examples illuſtrating theſe Directions, are contained in the firſt Section.

difficult of Cure, either from the ſlow and difficult Suſpenſion of the Fits, from the long Continuance of the original Diſeaſe, or from its being of the quartan Type; or if the operative Effects of the Solution have already been very troubleſome; it will be adviſable, in all ſuch Caſes, to attempt the Cure by a regular Courſe of the peruvian Bark ||.

If the Solution and the Bark, have been ſeparately adminiſtered and failed, it will ſometimes be adviſable to try the joint Powers of the Medicines at the ſame Time; but in Doſes rather ſmaller than uſual. For which Reaſon the Solution being taken at the ſtated Hours, three Times a Day, the Bark may either be given combined with it, at the ſame Periods †; or otherwiſe between the Fits, in as frequent Doſes as the Stomach can bear. This Method will ſucceed in ſome obſtinate Agues.

The radical Cure of Agues is found by Experience to be rendered much more difficult, from their being ſometimes connected with cachectic Conſtitutions, whether ariſing from Intemperance, Evacuations, the preſent or any previous Diſeaſe; and therefore ſuch a Connexion claims a particular Attention: and in Caſes thus

|| Of this Practice, ſeveral Examples have been given in the ſecond Section.

† See a few Examples of this Sort, in the ſecond Section.

circumſtanced, I hold it the beſt Practice, after the Fits have been ſuſpended by the general Courſe of the Solution, not to wait till the uſual Period of a Relapſe; but to proceed without Delay to finiſh the Cure, by the Bark, which will generally prove effectual, by acting both as a Febrifuge and a Corroborant, which laſt Property (as far as my Experience goes) the Solution has no Pretenſions to. Hence in Conſtitutions of this Sort, when the Diſeaſe has been ſuſpended by a regular Courſe of the Solution, and a Relapſe has actually taken place, the Propriety of attempting a radical Cure by Means of the Bark, will be ſtill more ſtrongly indicated.

If the operative Effects from the Solution, when exhibited in the uſual Manner, ſhould prove troubleſome, the Doſes ought to be diminiſhed, by a Drop at a Time, until the Patient is able to continue the Medicine without Inconvenience, for the Number of Days ſpecified in the general Direction.

But if the operative Effects, although troubleſome, are ſupportable, and confined to griping Pains of the Bowels, and not attended with Coſtiveneſs, but rather an Operation downwards, order the Patient, if an Adult (the Doſes being proportionably leſs for Children) to take from four to ſix Drops of liquid Laudanum, with the Solution two or three Times a Day, by which Means,

Means, the medicinal Courſe of the Solution may often be ſucceſsfuly continued, without diminiſhing the Doſes.

Sometimes it will be found neceſſary to intermit the Uſe of the Solution for a Doſe or two, or even a Day or two, when the operative Effects have proved very conſiderable. Such Neceſſity, however, is always very unwelcome, when it happens *before* the Fits are ſuſpended; becauſe it will generally protract the Cure. On the contrary, if *after* the Fits have been ſuſpended, that Neceſſity ſhould occur, it will be of very little Conſequence; becauſe, for the moſt Part, there will be very ſufficient Time to reſume the Medicine, before a Relapſe may take Place.

Indeed, at the End of the firſt five Days of Treatment, provided there has been a Suſpenſion of the Fits, and the Solution has occaſioned *any* operative Effects, a ſhort Suſpenſion from its Uſe ſeems no more than prudent, by Way of preventing, either their Increaſe or Accumulation; and alſo to allow Time for ſuch Effects, as are already produced to abate, and go entirely off, before the Medicine be again adminiſtered.

Theſe Intervals however, in the Courſe of the Solution, may frequently be employed to the Advantage of the Patient. For in many Caſes it will be found ſerviceable (eſpecially in cachectic Habits) to exhibit twice a Day ſome

grateful bitter, or tonic Medicine, in order to aſſiſt Digeſtion, and contribute ſomewhat towards corroborating a debilitated Syſtem.

At any Time during the Courſe of Treatment, if the Stomach ſhould ſeem to be loaded from Indigeſtion, or the Body happen to be very coſtive, a gentle Emetic or Laxative may be adminiſtered with Advantage.

The Diet ſhould be plain and mild; and Care ſhould be taken to avoid much Mixture of Food, or loading the Stomach. The Propriety of this Rule muſt appear obvious to every one; for as the chief Inconvenience from the Operation of the Solution, ariſes from the Diſturbance ſo frequently given to the Organs of Digeſtion, a due Attention to Diet will undoubtedly contribute to render the Medicine more acceptable to the Stomach.

In all Conſtitutions of Adults, diſtinguiſhed by Delicacy, eſpecially thoſe of Females, I would adviſe only ten or twelve Drops of the Solution to be given twice a Day, for the uſual Period; becauſe this Plan, although it may not be ſo ſpeedy, will be found to ſucceed in a great Number of Caſes, of which many Examples have been given in the preceding Narrative of Facts ||. It muſt however be acknowledged, that leſs depends upon apparent Delicacy of Conſti-

|| See the ſeven Caſes attended with no Operation, Page 29, and ſeveral others in the firſt Section.

Conſtitution, than might reaſonably be imagined; this Circumſtance being frequently counteracted by Idioſyncraſy, ſome delicate Habits bearing full Doſes of the Medicines, three Times a Day, with little or no Operation; and ſome robuſt Habits requiring the ordinary Doſes to be reduced.

In pregnant Women, I have cured ſeveral Agues by the Solution, and am of Opinion it may be ſafely and efficaciouſly exhibited in thoſe Caſes, provided it excite little or no Operation. But if troubleſome operative Effects are produced, there will be Reaſon to fear, leſt they ſhould be injuriouſly extended to the uterine Syſtem: and therefore, in Caſes thus circumſtanced, the Solution ought to be omitted, and the Cure attempted by the Bark or ſome other Medicine.

Agues in Children under two Years old, I have alſo treated ſucceſsfully by the Solution; but as the operative Effects in very young Subjects, are not ſo manageable by collateral Treatment, as in thoſe who are older; the Solution in general, ought not to be adminiſtered in ſo early a Period of Life: or if, from its being taſteleſs, and therefore more readily adminiſtered; or from other Medicines having failed, it ſhould be occaſionally exhibited, although its curative Effects will not be leſs than on other Occaſions, it certainly ought not to be perſiſted in, if the operative Effects become troubleſome.

For

For the Sake of a more accurate Variation of the Doſes, for Children under five Years old, it may be adviſable to add an Ounce of common diſtilled Water, to an ounce of the Mineral Solution, in order to form a Solutio Mineralis Mitior, of which ten Drops (being equivalent to five of the former) will be a Doſe for a Boy of five Years old, and ſo on in Proportion.

Every Rule and Precaution, that has been given relative to Adults, is equally applicable to Children under the ſame Circumſtances; but with additional Care, that the Neceſſity for any medicinal Treatment, of the operative Effects of the Solution, may not be frequent.

Thus I have endeavoured to give ſome general and particular Directions relative to the Treatment of Agues by the Solution; and I believe it may be laid down as a Maxim, that a regular Courſe of eight Days Adminiſtration of the Medicine, at a Medium, will be found ſufficient for a radical Cure.

As to irregular Caſes, eſpecially when attended with Relapſes, there is no ſaying what Number of additional Doſes, or Variations may be found neceſſary. On the other Hand, in very favourable Caſes, a conſiderable Number of Cures have been obtained, by the Uſe of the Solution for ſix Days; and many Inſtances have occurred, wherein it has proved ſucceſsful, when exhibited only three, four, or five Days.

The

The Prognoſis, with Reſpect to Agues under Treatment with the Solution, will depend much on Circumſtances, the ſame as under Treatment with the Bark: for if the Patient has enjoyed, for ſome Time paſt, a tolerable State of Health; has had but few Fits, and thoſe of the regular quotidian or tertian Type; and never had the Diſeaſe before; ſuch Circumſtances are in Favor of a ſpeedy Suſpenſion of the Paroxyms, and a radical Cure, and vice verſa.

In the Treatment of remitting Fevers, and periodic Headachs, the ſame Doſes, practical Rules, and Cautions, are to be obſerved, which have been laid down for the Treatment of Agues.

SECT.

SECT. VIII.

Obſervations on the operative Effects § of the Mineral Solution.

THE Mineral Solution, when adminiſtered in ſmall Doſes, will generally be attended with no Operation; yet it will frequently produce a Nauſea, often accompanied with a ſlight Griping, or an open Body*; ſeldom with Vomiting,

§ By OPERATIVE Effects is meant the Nauſea, Griping, Purging, &c. in Conſequence of the Action of the Medicine on the Body, independent of thoſe Effects which mark the Progreſs of Relief, or Cure of the Diſeaſe; and are therefore diſtinguiſhed by the Epithet CURATIVE. This Definition of Terms, it is hoped, will be admitted as an Apology for the Liberty I have taken, in annexing the Word OPERATIVE to that of EFFECTS, which otherwiſe, I am ſenſible, according to the uſual Acceptation of theſe Words, would be tautological. But the Importance of ſuch a Diſcrimination of Effects, as theſe Terms are intended to imply, muſt be obvious to every One, acquainted with the Nature of Medical Reports.

* By an open Body, in Conſequence of the Uſe of the Solution, is meant ſuch a State of the Bowels, as is attended with a Stool or two in a Day, more than the Patient has been accuſtomed to.

miting, or Purging. When it is given in large Doſes, eſpecially if three Times a Day, it will generally excite a Nauſea and Vomiting; or a Nauſea with Griping and Purging; and ſometimes theſe Effects are combined.

Certain Swellings, eſpecially of the Face; or a Loſs of Appetite, will ſometimes attend the larger Doſes of the Solution; and now and then even the ſmaller ones. Theſe are the general operative Effects of the Solution.

There are indeed ſome other Phænomena, apparently attending the Uſe of the Solution, the Mention of which ought not to be wholly omitted.

In ſeveral Inſtances it has proved evidently diuretic; yet in two or three it has ſeemed to diminiſh the natural urinary Diſcharge. In a few Caſes it has occaſioned an Uneaſineſs, and Pain at the Stomach, or a ſlight general Eruption like the Nettle Raſh; and in a very few Inſtances it has ſeemed to produce a Sweat, a Headach, or ſlight Tremors. Theſe Effects however, whether ſeparately or collectively conſidered, have been ſo few and contingent, that they ought not to be deemed any Part of the ordinary Operation of the Medicine.

I have adminiſtered the Solution in more than three Hundred and twenty Caſes, including different Diſeaſes, and carefully obſerved

ſerved the Effects; and I find that ſomewhat more than one Third of them were attended with Nauſea; and nearly one Third with an open Body; and about one Third with Griping.

Vomiting, Purgings, Swellings, and Anorexia, were but rare in Compariſon of the preceding Effects, and their leſs frequent Occurrence was generally found in the Order in which they are here enumerated, Swellings and Anorexia occurring the ſeldomeſt.

It was obſervable alſo, that about one Third of the Caſes were attended with no Operation; and about one fifth of the Caſes attended with Nauſea, and one fourth of thoſe attended with an open Body, were unconnected with any other Effects. Griping did not often occur alone; Purging and Anorexia ſeldom or never; and Vomiting was always accompanied with more or leſs of Nauſea.

Hence the Aſſociation of two or three Effects was not unfrequent, whilſt the Concurrence of a greater Number was rare. Indeed the moſt general Circumſtance attending the Practice, was either no Operation at all, or the ſingle Effects of a ſlight Nauſea, or an open Body.

But as the *operative* Effects of ſo active a Medicine, will always attract the Attention of every prudent Practitioner, and ſometimes be found to require a little medicinal Treatment, they

they ought to make a diſtinguiſhed Part, in the general Hiſtory of its Effects: for which Reaſon I think it my Duty to dwell rather longer, on this Part of my Subject.

A Nauſea for half an Hour, a Stool or two extraordinary in a Day, or very ſlight griping Pains of the Bowels, are ſuch gentle Effects of the Medicine, as ſeldom to require its Adminiſtration to be interrupted.

A continued Vomiting however, attended with conſiderable Nauſea; a ſmart Griping and Purging; Swellings or Anorexia; are Effects which demand more particular Attention.

The emetic Effect, I have never yet had Occaſion to treat medicinally, becauſe when I have happened to be preſent, the Medicine being omitted, it has always gone off ſpontaneouſly in a reaſonable Time: but if it had not, I ſhould have treated the Patient juſt the ſame as I would, if he had taken an over Doſe of Tartar emetic; the Mineral Solution being of a ſimilar Narure, with Regard to its ſtimulant Property.

When, after the Uſe of the Solution, a purging continues and becomes troubleſome, although accompanied with but little Griping, the Exhibition of Opiates in ſmall Doſes, two or three Times a Day, will generally ſoon give effectual Relief to the Bowels.

But if griping Pains ſhould become conſiderable, and ſhould be attended with either very frequent unrelieving Stools, or a Coſtiveneſs; two or three mild Doſes of the cathartic Mixture, or ſpirituous Tincture of Rhubarb, prudently adminiſtered in the Courſe of a few Days, and aſſiſted by a gentle Opiate after each Operation, will ſeldom fail to remove the Grievance.

The Swellings which ſometimes attend the Uſe of the Solution, are rather of the elaſtic Kind. They moſt frequently appear on the Face, particularly affecting the Eyelids, and are the worſt in a Morning: they are ſometimes connected with a Tumeſcence of the Stomach and Abdomen, and now and then the Tumefactions are general, affecting alſo the Limbs.

When they do occur (which is not often) it is generally within a few Days after commencing the Uſe of the Medicine, diſappearing again on its Diſcontinuance. They are alſo diſpoſed to recur by a Repetition of the Courſe, unleſs the Doſes are ſomewhat diminiſhed, or given ſeldomer.

They do not ſeem however, to have any dangerous Tendency; becauſe they ſpontaneouſly ſubſide on the Diſuſe of the Medicine; but as they are ſometimes troubleſome, from a Senſation of Tenſion in the Parts affected, and their Removal ſeems to have been accelerated by

by the Adminiſtration of gentle Emetics and Cathartics, ſuch Treatment* may with Propriety be adopted in particular Caſes.

The Anorexia, (or continued Loſs of Appetite) differs from the Nauſea in this, that although they are both the Effects of the Solution, the former ſeems to be one continued Effect, during all or moſt part of the Adminiſtration of the Medicine; whereas the latter is only a tranſient Effect, in common with that of many other active Medicines, ſubſequent to the Exhibition of each Doſe.

In Caſes of Anorexia, the Appetite is in general ſoon recovered, on omitting the Uſe of the Solution; but when it does not ſeem to return kindly, the ſpeedieſt Relief has moſtly been obtained by gentle Evacuants†, eſpecially Emetics.

The Nauſea as diſtinguiſhed from Anorexia, is ſo tranſient an Effect, as not to become an Object of medicinal Treatment

As to the extraordinary and unuſual Effects of the Solution, they have been ſo rare, that I have

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* See the Caſes of Williams, P. 19. Spilſbury, P. 32. Beardmore, P. 43, and Lawrence, P. 52.

† See the Caſes of Evans, P. 8. Hodſon, P. 10. Weaver, P. 37. Beardmore, P. 43, and Moreton, P. 55.

I have ſeldom or never found it neceſſary to do more, than ſuſpend the Uſe of the Solution; and not even that in all Caſes.

Some of my Readers may perhaps think, that the operative Effects of the Solution are materially ſerviceable in the Cure of Agues. It is not improbable, but that a moderate Degree of Nauſea, accompanied now and then with an emetic Effect, may in ſome Caſes aſſiſt the Cure, by cleanſing the Primæ Viæ, and acting as a general Relaxant; but the conſiderable Number of ſpeedy and radical Cures, that have taken Place from moderate Doſes of the Solution, without the leaſt ſenſible Operation, is a clear Proof, that its operative Effects are not at all eſſential to its Succeſs. I would therefore conſider the Operation, for the moſt Part, as the unavoidable Conſequence of the neceſſary Doſes of the Medicine, in certain Conſtitutions; juſt as I would the operative Effects of a neceſſary Quantity of Mercury upon the Mouth, when a Salivation is unintentionally raiſed in the Treatment of the Lues Venerea.

Thus I have endeavoured to give a Deſcription, or to ſpeak with more Correctneſs (with Regard to ſo active a Medicine) conſiderable *Outlines* of a Deſcription, of the operative Effects of Arſenic on the human Syſtem. It remains for future Experience to fill up thoſe Outlines, and render the Deſcription complete. In the mean Time I flatter myſelf that the Obſervations already made on its Operation, from a cloſe Attention

tention to the Subject, will render the Inveſtigation of its curative Effects in other Diſeaſes, much leſs difficult to thoſe, who may hereafter be inclined to proſecute ſuch an Enquiry.

SECT. IX.

Obſervations on the curative Effects of the Mineral Solution.

BEFORE I enter fully upon this part of my Subject, I hope the Reader will excuſe my taking the Liberty of noticing a few Circumſtances, relative to the preceding Sections.

The Diſeaſes which have beeen treated, having their Types characteriſed by ſtated Paroxyſms, and conſequently the Progreſs of their Relief and Cure very diſtinguiſhable, were perhaps more favourable for medical Inveſtigation, than any others that could poſſibly have happened.

The

The firſt Section contains fifty-two Caſes of Agues, ſucceſsfully treated by the Solution; ſixteen of which have been given at large, for the Sake of more full and explicit Information; and thirty-ſix abſtracted, for the Sake of communicating Facts with Brevity. We find alſo that they contain Examples of Caſes, under a Variety of Circumſtances; moſt of them were treated with moderate Doſes of the Solution, and ſome of them with large Ones, and all ſucceſsful. Some Caſes during Treatment were attended with no Operation, and others with no Fits. The Treatment of others were attended with one, two, three, or more Fits, and ſome few Caſes were protracted by Relapſes before they were perfectly cured.

The ſecond Section contains twelve Caſes (four full Ones and eight abſtracted) which after Failure by the Solution, were cured by the Aſſiſtance of the Bark; eight of them by the Bark alone, and the other four by the Solution and Bark jointly.

The third Section exhibits ſix Caſes, treated by the Solution, in three of which the Fits were only ſuſpended, in two only relieved, and in one not relieved.

The fourth and fifth Sections contain an Account of ſixteen Caſes of remitting Fevers, and ſeven of periodic Headachs, treated likewiſe

wiſe by the Solution, which ſeemed to be attended with the ſame Succeſs as in Agues.

Having premiſed theſe general Facts; in order to render them more ſatisfactory, for the eſtabliſhing a few general practical Concluſions, hereafter to be drawn; and alſo to ſhew that they have been collected, as a juſt Specimen of the Practice which has been recommended; I ſhall here ſubjoin a View of the curative Effects of the Medicine, in all the Caſes of Agues, in which the Solution has been exhibited.

A tabular View of Agues cured, ſuſpended, relieved, and not relieved by the Mineral Solution.

Cured by the Solution, without Relapſes.	Cured by the Solution, with Relapſes.	Suſpended by the Solution.	Relieved by the Solution.	Not relieved by the Solution.	
144	27				171 cured by the Solution.
		29	13	3	45 cured by the Aſſiſtance of the Bark, after Failure by the Solution.
		16	6	2	24 not cured by the Solution chiefly from the irregular Attendance of the Patients.
		6	1		7 remaining under Treatment.
171		51	20	5	247 in all.

By Means of a general Account, including the whole Number of Cures and Failures, the Succeſs attending the Practice is deſcribed with more Preciſion, and the Reader is the better enabled to judge, what Degree of Confidence he ought to place, in the Efficacy of the Medicine.

It appears on examining the preceding Table that of two Hundred and forty-ſeven Caſes of Agues, one Hundred and ſeventy-one were radically cured by the Solution; that forty-five were cured by the peruvian Bark, after Failure by the Solution; that twenty-four proved unſucceſsful, from a partial Adminiſtration of the Solution, occaſioned by the irregular Attendance of the Patients, and that ſeven remained under Treatment. Fifty-one alſo we find had the Fits ſuſpended by the Solution for a Time; Twenty were relieved by its rendering the Fits milder, or ſhorter, or both; and only Five were not relieved. It might be alleged that theſe five Patients only took the Solution from three to five Days each: this Argument however I ſhall not urge: infallible Remedies are not expected.

In quotidian Agues, it was found from comparing the Reports, that the Number of Suſpenſions, on the firſt four Days during Treatment was nearly equal; except that rather more occurred after the ſecond Fit than any other. It appeared alſo, that in tertian Agues, nearly one Fourth of the Caſes during Treatment

ment had no Recurrence of Paroxyſms; yet that a Suſpenſion more generally took Place, after one or two Fits. As to the quartan Caſes, they were too few to afford any general Remarks. It was obſervable that Quotidians and Tertians required much the ſame Doſes and Periods of Treatment for the Suſpenſion of the Fits; that nearly three Fourths of all the Caſes during the Treatment, had either no Paroxyſms, or but one or two each; and that ſcarce more than one Fourth of the Caſes exceeded that Number. It was likewiſe deſerving Notice, that the ſame Doſes and Periods of Treatment produced Effects very nearly ſimilar, in ſuſpending the Paroxyſms of remitting Fevers, and periodic Headachs,

Had I been inclined to have made a partial Selection of Caſes, a more flattering and ſtriking View of the medicinal Virtues of the Mineral Solution, might have been exibited; but as a candid Narrator of Facts, I thought it my Duty not to conceal the Failures of the Medicine; and for the Sake of communicating uſeful Information, I have in general been more full and particular, in giving an Account of irregular Caſes than of others; of which the whole Section of Agues treated by the Bark contains Examples.

It may be imagined by ſome, notwithſtanding what has been advanced in Favor of the Solution, that the Succeſs related is much inferior to what might have been, had the Caſes been treated by the Bark. But were I to be at the Trouble, of drawing out from my general Reports, an equal Number of Caſes, wherein that Medicine had been exhibited, I

believe the Failures would be found nearly equal. For not to mention the Number of Patients who either cannot, or will not take the Bark, amongſt Children and Adults; how often does it prove unſucceſsful, from diſagreeing with the Stomach or Bowels, thereby producing Vomiting, or Purging; from the Difficulty of giving it in ſufficient Doſes in the Intermiſſions of ſome Quotidians and double Tertians; from the Obſtinacy of ſome Agues of long Continuance, particularly Quartans, in cachectic Patients; from the Medicine loſing its Efficacy, by the Conſtitution being too long accuſtomed to its Uſe; and from the Irregularity of Patients in the Mode of taking it.

By ſuggeſting theſe Circumſtances to the Reader, I do not mean to diſparage the Merits of the Bark as a Febrifuge; for it is certainly a noble Remedy; but whilſt I am candidly acknowledging the Failures of the Solution, as a younger Brother, it is but juſtice to ſay that ſimilar Ones have attended the Hiſtory of the Elder. Nor is an exact Compariſon of the Merits of the Solution compared with thoſe of the Bark, at all eſſential to the preſent ſubject: it is ſufficient, if the curative Effects of the Solution, in the preceding Caſes, have been ſo far ſimilar to thoſe of the Bark in the ſame Diſeaſes, as to impreſs the Mind of the Reader, with a proper Idea of its Importance, in the ſame Points of View. Its Importance indeed, with Regard to Agues, has been demonſtrated in a ſtriking Manner: for when it is conſidered that of two Hundred and forty-ſeven Caſes, in which it was adminiſtered, two Hundred and forty-two

forty-two have been radically cured, or had their Fits ſuſpended, or relieved; I believe that very few Medicines, if any, are to be found among the Rank of Specifics, poſſeſſed of a more general curative Influence, than the *Mineral Solution* in *Agues*.

SECT. X.

General Obſervations and Practical Concluſions.

I SHALL here endeavour to remark ſuch Circumſtances, as either appear to deſerve ſome Notice in a curſory Way; or ſeem not ſufficiently pointed, to merit a Place in the foregoing Sections; and ſhall then proceed to cloſe the Subject, with a few general practical Concluſions.

Had it been announced to the World, a century or two ago, that by the ſimple Contrivance of a minute Diviſion of its Parts, the moſt violent mineral Poiſon then known, had been found experimentally to be a Medicine of moſt ſurpriſing activity and efficacy, yet ſafe in its Adminiſtration; the Account would hardly have been believed: nevertheleſs this is really the Caſe at preſent with Reſpect to Arſenic.

We find that the thirteenth Part of a Grain of this Mineral is an efficient Doſe for an Adult; that

that about one Grain, and three fourth Parts of a Grain, will in general radically cure an Ague; and that the Variation of the ſixtieth or eightieth Part of a Grain, in an eſtabliſhed Doſe, will frequently render it inſupportable or otherwiſe; and yet Experience has demonſtrated, that by proper Care and Attention, it may be exhibited with great Safety. But in order to place the Subject in a more clear and accurate Point of View, let us recollect, that a Grain of the Mineral was ſaid to be contained in one Hundred and ſixty Drops, or two Drams of the Solution, and that, on an Average, a Courſe of its Adminiſtration for eight Days (which implies twenty four Doſes) was allowed for the Cure of an Ague; and then the Quantity of the Solution, and conſequently of the Mineral, requiſite for the Cure of Patients of different Ages, will be illuſtrated by the three following Examples.

A Child of three Years old, at four Drops to a Doſe, will require ninety ſix Drops of the Solution, or nearly five eighth Parts of a Grain of the Mineral; a Boy of twelve, at ten Drops to a Doſe, two Hundred and forty Drops, or a Grain and a half; and a Man of twenty, at twelve Drops to a Doſe, two Hundred and eighty eight Drops, or very little more than a Grain, and three fourth Parts of a Grain.

Perhaps this Repreſentation of the Activity of the Mineral Solution, may induce my Reader, if of a timid Diſpoſition, to conſider the Circumſtance, as a ſtrong Reaſon why it ought not to be

be uſed as a Medicine, through Fear of Danger. I have already ſuggeſted ſeveral Arguments in the Courſe of this Work, with the View of diminiſhing Prejudices, and removing groundleſs Apprehenſions, and I beg Leave on this Occaſion to add a few more to the ſame Purpoſe.

The Experience which we derive from a cloſe and diſcriminating Attention, to a numerous Train of correſponding Facts, produced by the Agency of a ſingle Cauſe, muſt certainly be the moſt ſatisfactory; becauſe the leaſt liable to Deception. And as this has been the Plan, on which the preceding Reports have been conduced, it affords a fair Argument in Behalf of the Safety of the Medicine.

A Circumſtance alſo in Favor of active Medicines of the ſtimulant Kind is this, that they firſt produce their Effects on the Primæ Viæ, or natural Functions, and only ſecondarily on the Vital and Animal; by which Means the operative Effects do generally give timely Notice, for regulating the future Doſes; ſo that the vital and animal Functions are ſeldom or never affected. This Doctrine I have found ſtrikingly exemplified, with reſpect to the Mineral Solution, which is alſo corroborated by our daily Experience of mercurial corroſive Sublimate, and emetic Tartar: and therefore the Effects of the Solution, properly adminiſtered, being ſo ſeldom extended beyond the Organs of the natural Functions, is a ſtrong Argument in Favor of its Safety.

It alſo deſerves Attention, that the Deſcription already given of the Operation of the Medicine, has been drawn up from Caſes which occurred, during the Inveſtigation of its general Effects; and conſequently, when a conſiderable Variation of the Doſes was unavoidable; for which Reaſon, there is no Doubt but the Effects of regular and eſtabliſhed Doſes, will prove milder; and this Circumſtance affords another Argument in Behalf of the Medicine.

Nor is it any Reaſon againſt the Uſe of Arſenic as a Medicine, that when given as a Poiſon, all the Functions ſhould ſeem to be deranged, and almoſt deſtroyed at once; for it would be abſurd and unreaſonable to ſuppoſe, that we ſhould be able to diſtinguiſh the uſual Aſſemblage, and Progreſſion of the operative Effects of a medicinal Doſe, during the violent Confuſion, which is ſo quickly introduced into the whole animal Œconomy, by the accumulated Operation of a poiſonous One: and therefore the Effects of the Mineral Solution, properly adminiſtered, being ſo ſeldom extended beyond the Organs of the natural Functions, is another, and a very ſtrong Argument in Favor of its Safety.

Nor ought it to be urged as an Objection to the Uſe of the Solution, that the Patent Ague Drops have been reported to produce diſagreeable Effects; for both the Solution and Drops, are Medicines of too great Activity, to be ſafely adminiſtered, by thoſe who are wholly unacquainted

acquainted with the Practice of Phyſic. Hence is it reaſonable, that Mankind ſhould be deprived of the Uſe of a powerful and efficacious Remedy, from the Diſcredit it may receive, by its imprudent Adminiſtration in the Hands of the Ignorant?

Upon the whole, from the Arguments which have been advanced, it is to be hoped, that thoſe alarming and unlimited Apprehenſions, which have been generally aſſociated with the Idea of a mineral Poiſon, will, with Regard to the preſent Medicine, be in a great Meaſure removed.

The Mineral Solution alſo deſerves Attention in an œconomical Point of View, for it will no Doubt be preſcribed by moſt of our Phyſicians of Infirmaries and Diſpenſaries, in the Cure of Agues, and other periodical Diſtempers, which have been commonly treated by the peruvian Bark. The Conſequence of which will be, that if it is approved of, after a fair Trial of its Effects, its Reputation will be ſoon eſtabliſhed, and the Medicine becoming extenſively uſeful, thoſe charitable Inſtitutions will experience a certain Saving of conſiderable Sums of Money, annually expended, in that coſtly foreign Drug, the peruvian Bark.

Of the Agues which have been treated, the major Part occurred during the late Period, when the Diſeaſe was epidemic; and it was obſervable, that the earlier Part of Life was the moſt liable to the Diſtemper; for more than three fourths of the Patients were under thirty

Years of Age. Why theſe who were under mid-Life, and many of them in the Vigor of their Conſtitutions, ſhould be more ſubject to the Diſeaſe, than thoſe who were more advanced, is perhaps not eaſily to be accounted for. The Number of Males and Females, affected with Agues, were nearly equal.

In the Deſcription which has been given, of the operative and curative Effects of the Mineral Solution, my principal Care has been to give ſuch a cautious Repreſentation of Facts, as ſhall be found to correſpond with future Experience, in all the material Parts of the Practice: I therefore flatter myſelf, that the following practical Concluſions, may be ſafely drawn from the Premiſes.

1ſt. That the Mineral Solution is an efficacious and valuable Remedy, in the Cure of Agues.

2d. That in Proportion to the Number of Caſes, in which it has been tried, it appears to be equally ſucceſsful in remitting Fevers, and periodic Headachs.

3d. That being taſteleſs, it may often be conveniently and ſucceſsfully exhibited to Children, and certain Adults, who cannot be prevailed upon to take the peruvian Bark, from its Bitterneſs, or other medicinal Qualities.

4th. That

4th. That from its general efficacy, it is highly probable, it will prove ſucceſsful in moſt Caſes, wherein the peruvian Bark ſhall fail in producing its uſual Effects.

5th. That although its curative Virtue will be obvious in almoſt every Caſe of Ague, the Paroxyſms in a Number of Inſtances, will only be relieved, or ſuſpended for a certain Time.

6th. That a very frequent Cauſe of the Failure of the Medicine, is owing to its operative Effects proving troubleſome, and thereby not permitting a regular Courſe of its Adminiſtration.

7th. That the Operation of the Medicine on the Bowels, as a Cauſe of Failure may frequently be obviated, and its Adminiſtration ſucceſsfully continued, by the Aſſiſtance of ſmall Doſes of liquid Landanum.

Before I entirely diſmiſs this Subject, it may not be improper juſt to intimate, that from the Variety of Diſeaſes, in which I have tried the Mineral Solution, there is good Reaſon to believe, that its Efficacy will not be confined to periodical Diſtempers. The Examples however, which have hitherto occurred in Favor of this Opinion, have not been ſufficient for the eſtabliſhing any general Facts; and therefore, not to indulge in Speculation, I ſhall be ſilent with Regard to its Effects in thoſe Caſes.

The moſt eminent Philoſophers, who muſt ever admire the great Lord Verulam's Plan for the Improvement of Science, agree with him, that our Knowledge muſt depend, not on Theory, but Experience. Hence the ſquaring of a Stone, for that noble and permanent Fabric, now riſing on the Verulamian Baſis, is of more Importance to real Science; than the Erection of the moſt ſplendid Edifice, on the Foundation of mere Hypotheſis and Speculation.

A Letter from Doctor ARNOLD, Phyſician to the General Infirmary, and to the Diſpenſary, at Leiceſter.

Dear Sir,

I WAS pleaſed to learn, by your laſt, that your intended publication relative to the cure of intermittents by means of an arſenical Preparation, is in ſuch forwardneſs; and ſhall willingly contribute my aſſiſtance, to eſtabliſh the credit of a remedy, of which I am led by experience to form a very favourable opinion. With this view you at length receive a ſhort ſketch of my obſervations, on the uſe of Arſenic in the cure of intermittents; which I flatter myſelf will be found to correſpond in a great meaſure with your own, and thoſe of our friend, DOCTOR WITHERING; who firſt communicated to me the uſes of this new Medicine, and the method of preparing it.

I would moſt readily have ſent you a complete ſummary of my practice in this reſpect; in which I would have left it to facts to ſpeak for themſelves: but am obliged to decline an undertaking, which would require more time than is compatible with your haſte, and my preſent leiſure.

The

The medicine I have made uſe of is a ſolution of the common *arſenicum album* of the ſhops; of which the following is the formula.

Recipe Arſenici albi pulveris ſubtiliſſimi grana octo,
Aquæ diſtillatæ uncias octo.

Digere in balneo mariæ donec penitus ſolvatur arſenicum. Caveas autem ne aquæ vel guttula evaporetur, quæ non ſtatim, ſolutione finita, reponatur. Per chartam deinde cola.

Doſis a guttis quindecim ad quadraginta, ter in die, inter febrium intermittentium paroxyſmos, in menthæ vulgaris infuſi unciis duabus.

I have never given leſs than fifteen drops; never more than fifty; and rarely more than forty; the latter quantity being uſually found to be the higheſt doſe that was neceſſary; or that the ſtomach, and bowels, of the moſt robuſt, could bear, without uneaſineſs; and the excitement of griping, or purging, in the latter; and of nauſea, or vomiting, in the former.

At firſt, I uſed always to begin with fifteen drops; and gradually to increaſe the number till it arrived at forty: unleſs, before it was advanced to that amount, it began to excite a nauſea of any long duration; or vomiting, or a pain in the bowels, or purging, that ſeemed to demand attention. I then either deſiſted from increaſing the doſe; or, if it was yet inſufficient

ent to effect a cure; and the diſorder of the ſtomach, and bowels, was inconſiderable, and appeared to be merely the reſult of too great irritability of thoſe parts; while I continued to increaſe it, I ordered two or three drops of *Tinctura Thebaica* to be added to each doſe, which uſually had the deſired effect of appeaſing the diſturbance in the alimentary canal.

But if the patient was in a very weak ſtate; and the ſtomach, and bowels, from any cauſe whatever, too irritable, and liable to be diſturbed by ſickneſs, or purging, upon ſlight occaſions; and the diſorder excited, in conſequence of ſuch delicate ſtate of theſe organs, was too conſiderable to be overlooked; I either lowered the doſe a little, or, which rarely happened, omitted the medicine altogether.

After more experience, I found it unneceſſary to begin with ſo ſmall a doſe; excepting in the caſes of young, or delicate, or infirm perſons. In treating ſuch as were robuſt, and in the prime of life, I commonly found that I might ſafely commence with a doſe of thirty drops; and ſoon increaſe it to forty: by which means the cure was more ſpeedily effected, than by overcautiouſly beginning with the loweſt doſe, and proceeding ſo very gradually, as I had before done, in its augmentation.

In conſequence of a timidity, which was very natural, in the uſe of a remedy ſo formidable, and ſo little known, I have never yet ventured

ventured to give it to very young children; nor to more than about half a dozen out-patients; nor to a ſingle patient belonging to the diſpenſary: but have confined it almoſt entirely to the in-patients of the infirmary; who are under the conſtant inſpection, and regulation, of the houſe apothecary; and among whom none are admitted under ſix years of age. But experience having now taught me to be leſs apprehenſive, I am juſt beginning to preſcribe it for out-patients; and intend, ſoon, to introduce it into the diſpenſary.

It is now eleven months ſince; after having tried it in one very bad, and obſtinate caſe, which had reſiſted the powers of the *carribean*, and *red* bark, and had at length completely yielded to the arſenical ſolution; I began to give full ſcope to the uſe of this medicine, and preſcribed it in almoſt every caſe which offered. I have now tried it in about eighty caſes of intermittents; quotidians, tertians, and quartans: and have ſeldom known it fail of ſucceſs. In a few inſtances, I have ſeen reaſon to lay it aſide, and to truſt the cure to the red bark, which has ſucceeded: but the ſolution has, I believe, ſucceeded in as many inſtances, when the red bark has failed. And in no caſe am I ſenſible that it ever produced any permanent ill effect; or any other tranſient inconvenience than nauſea, vomiting, griping, and purging; which were always prevented by care, and attention, in the exhibition of the medicine, from becoming conſiderable, or in the ſmalleſt degree alarming.

In

In ſome intermittents, which have been accompanied with anaſarca, or aſcites, I have found it convenient to uſe diuretics, of the ſame kind which I commonly preſcribe, under the ſame circumſtances, when the cure of the intermittent is entruſted to the peruvian bark; and have experienced from them the ſame advantage. But when the ſwelling has not been very great, I have truſted in both caſes, for the cure of the Dropſy, to the medicine which was to cure the intermittent; and in both caſes with equal ſucceſs. Dropſical ſymptoms have, indeed, with us, been common attendants upon all ſorts of intermittents; but eſpecially upon quartans: and have often diſappeared ſoon after the intermittent has been properly cured, without the uſe of any diuretic: but it may, perhaps, be worth remarking, that, where there has been no previous dropſy, ſymptoms of that diſorder have begun to appear at the very time when the intermittent has begun to give way, whether to the bark, or to the arſenical ſolution; have ſuddenly become very conſiderable; and have gradually diſappeared on the coming on of a diureſis; whether by means of the common diuretics; or without their aſſiſtance, and by the tonic power of the febrifuge alone.

That the peruvian bark, and arſenical ſolution, cure intermittents with equal ſafety, and certainty, I think I may conclude from what I

have hitherto experienced of their reſpective efficacy. Nor can I yet determine which cures with the greateſt celerity. If it ſhall prove, on farther trial, that the arſenical ſolution cures in as ſhort a time as the beſt red bark; which I imagine it will be found to do; the ſaving to our hoſpitals will be very conſiderable: but if it ſhall be found to be ſo much more tedious, as to loſe in time, and the maintenance of the patient, as much as is gained in the cheapneſs of the medicine; the ſaving will be greatly diminiſhed; as, in that caſe, it will be confined to out-patients. My experience, however, in this reſpect; though no exact comparative trials have yet been made, or could be made while the ſolution was uſed with great caution, and timidity; leads me to expect that a more accurate compariſon would not diſgrace the arſenical preparation. And, at all events, it will often be found to be a valuable ſubſtitute, in conſequence of its inſipidity, when a nauſeous medicine would be refuſed, or a load of bark could not be borne.

You have now every thing material which at preſent occurs to my recollection on this ſubject: for I have not had leiſure to examine my notes. Hereafter you may command whatever more experience, and more leiſure on my part, and leſs haſte on yours, ſhall enable me to ſupply you with. In the mean time you are at perfect liberty to inſert this in your intended publication on this new *ſpecific* for the cure of intermittents;

termittents; or to make whatever uſe you ſhall judge beſt of the information which it contains.

I am, dear Sir,

Your faithful friend, and ſervant,

THOMAS ARNOLD.

WEST-COTES,
March 27th, 1786.

A Letter from W. WITHERING, M. D. F. R. S.

Birmingham, May 21ſt, 1786.

Dear Sir,

THE Arſenical Solution was firſt uſed here in the Autumn of the year 1783, at which time Intermittents of various denominations were very prevalent both in this and in the adjoining Counties. The very general uſe of the *Taſteleſs Ague and Fever Drops* at this period made me ſolicitous to know the compoſition of that medicine, and I was informed it was made from the Ore of Cobalt; but as it did not anſwer to the uſual teſts for that Semi-metal, I thought it was probably Arſenic, which is known to abound very generally in cobalt Ores. Whilſt I was intending to ſubmit the drops to a

more effectual examination, my good friend and your excellent Apothecary Mr. Hughes informed me, that he had made an analyſis of the drops, and found them to be a ſolution of Arſenic.

At firſt we gave the medicine cautiouſly, and were ſparing in the doſes, but it nevertheleſs gained our confidence, and in the vernal Intermittents of the following year it came into pretty general uſe. I am obliged to Mr. Bayley, who was then the Apothecary to our Hoſpital, for the dates and many other of the circumſtances mentioned in this Letter, and I know I can depend upon the accuracy of his accounts as they are taken from the Phyſicians Books, and rendered more perfect from his own obſervations. Out of forty-eight patients, thirty-three were cured by the uſe of the ſolution alone; three complained of pain in the Stomach, loſs of Appetite, and had ſwollen faces; but their fevers were cured, and a little ſoluble Tartar removed the ſymptoms now mentioned. The other twelve patients received no benefit. In the Autumn of 1784 it was almoſt conſtantly preſcribed, and has ever ſince maintained its credit with us under a very great number of trials.

At firſt we uſed a ſimple ſolution of Arſenicum album, one Grain to each Ounce of diſtilled Water. The ſolution is facilitated by boiling for a minute or two in a florence Flaſk, or other glaſs Veſſel, but long continued boiling diſpoſes it to precipitate again. After ſome time,

Mr. Bayley

Mr. Bayley added Nitre to the ſolution, by the direction of Mr. Hughes, to prevent the precipitation, which in the rapid conſumption in the Hoſpital had hardly been obſerved to take place, but in the ſmaller demand of private practice ſeldom fails to happen. I ſhould alſo mention that an ounce of Alcohol has lately been added to twenty Ounces of the ſolution, but I am doubtful of the propriety of this addition.

This Medicine was given to Adults in doſes of twenty-five or thirty drops, three times every day, without any regard to the preſence or abſence of the fever, and the Cure was generally effected by about half an Ounce.

Having had occaſion to remark a variety of what you have properly ſtiled *operative* Effects, in people who had taken the Taſteleſs Drops in an indiſcriminate and unguarded manner, I thought it an object to aſcertain if poſſible, the Circumſtances upon which theſe unwelcome effects depended. I preſently obſerved that Children were leſs apt to ſuffer from the medicine than adults, for obvious reaſons therefore I was induced to give the ſolution *very largely diluted* in thick Gruel, Barley Water, or ſome other mucilaginous liquor. I have likewiſe deſired my patients to avoid expoſure to cold, but I am not quite decided whether this latter caution be neceſſary; The former certainly is ſo, for out of the great number of patients for whom I have preſcribed the Medicine, as well in private as in public practice, I do not recol-

lect

lect a ſingle inſtance in which it produced either ſickneſs, purging, pain, ſwelling, or any other † than *curative* effects. Mr. J. Freer jun. a very eminent Surgeon in this place, and who was one of the firſt to turn his attention to this medicine, tells me he has given it to more than a thouſand patients, without either hazard or inconvenience.

I think Mankind much indebted to your endeavours to reſcue a very uſeful Medicine from that oblivion to which the general abuſe of it would ſoon have conſigned it, and I am ſatisfied that in patients where great debility has prevailed, either from old age or other cauſes, and where the recurrence of the fever under the quotidian form, with the long protraction of the paroxyſms and the great irritability of the Stomach, has not allowed a ſufficient quantity of Bark to be given, I have ſeen their exiſtence preſerved by the uſe of the Arſenic.

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† The Reader will, perhaps, be ſurpriſed at the different Accounts of the operative Effects of the Medicine by the Author, and his two medical Friends. But when it is recollected that his Solution, although exhibited in fewer Drops, contains three Times more of the Mineral than theirs; he apprehends the chief Cauſe of ſuch Difference may be eaſily accounted for, from that Circumſtance. For of the ſtrong Solution prepared by the Author, with the fixed Alkali, the medium Doſe for an Adult was eſtimated at twelve Drops; but the medium Doſe of the ſimple Solution uſed by Dr. Arnold, which ſeems to have been about thirty-ſix Drops, was only equivalent to nine of the ſtrong; and Dr. Withering's general Doſe of the ſame Solution, from twenty-five Drops to thirty, would only prove equal to ſeven of the ſtrong.

I wiſh to add much more upon this ſubject, but time will only allow me to ſay that I remain with great eſteem Dear Doctor,

Your obliged and faithful friend,

W. WITHERING.

OBSERVATIONS.

IN Conſequence of having lately intimated to theſe Gentlemen, my Intention of publiſhing on the Effects of Arſenic, in the Cure of Intermittents, they have, ſince I finiſhed theſe Reports, favoured me with the preceding intereſting Letters on the ſame Subject. I ſay *intereſting*, becauſe as Phyſicians, they have diſtinguiſhed themſelves by their Succeſs in Practice; and as medical Authors, by their Learning, Judgment, and Liberality of Sentiments.

When therefore it is conſidered that three HOSPITAL PHYSICIANS of different Counties, and conſequently in different Spheres of Practice, under a firm Perſuaſion of promoting the Good of Mankind, have diſintereſtedly and impartially united their public Teſtimonies, in Favor of an active and efficacious medicine, not confined

fined either to the ſame Preparation, or the ſame Doſes; it is reaſonable to preſume, it will be entitled to a fair and candid Trial of its Virtues, by the Gentlemen of the Faculty, both of this and other Countries. From ſuch Trials, I flatter myſelf its Reputation will ſoon be eſtabliſhed on ſo firm a Baſis, as to render it highly uſeful, not only to the preſent, but future Generations.

FINIS.

ERRATUM.

Page 10, Line 15, for three Days, read nine Days.